MEDICAL REPOSITORY,

FOR

AUGUST, SEPTEMBER, AND OCTOBER, 1811.

Discussion of a nice and curious Question in METALLURGY.

ON the 24th December, 1810, Mr. Mitchill presented to the House of Representatives in Congress, the petition of Joseph Curtis and others, brass founders of New-York, praying for a repeal of the duties on imported *zinc*, or *spelter*. By an order of the House the petition was referred to the standing committee of commerce and manufactures. This committee consisted of Messrs. Newton, Mitchill, Cutts, Pitkin, M'Kim, Seybert, and Bibb.

The committee, on considering the matter and merits of the petition, were of opinion, that no legislative provision was necessary, inasmuch as the case was already provided for under the denomination of *tutenague*, a preparation of zinc, already allowed to be imported free from impost.

Whereupon Mr. Mitchill wrote the following information to his constituents, the petitioners:

"The petition of the brass founders of New-York has been considered by the committee of commerce and manufactures. The prevalent opinion there, is, that the existing law admits "*zinc*" or "*spelter*" free from duty, under the name of *brass tutenague*, or *tutenague*.—This is one of the forms in which spelter comes to market, and is the name by which that metal seems to be known in our statute. If orders and invoices were made out, by this technical word, no difficulty is apprehended of importing it upon terms as liberal as you wish. I hope you will value very highly this early and gen-

erous regulation of our government, made for the purpose of facilitating and fostering the metallic arts in our country. Be obliging enough to inform the trade of this view of a subject which they have so much at heart.

" Feb. 19th, 1811."

To this, Mr. Curtis returned the following answer :

" Sir,—Your letter of the 18th inst. was duly received, and its contents made known to the brass founders and the public, as you suggested.

" Sensible of your willingness to serve the manufacturing interest of our country, it is with some regret that I have to inform you, that our collector is of the opinion that as *zinc* or *spelter* is a different metal from *tutenague*, it cannot be entered under that name without making the importer liable. He is, however, of opinion, that if the honourable committee was to suggest their opinion to the officer having authority, proper instruction would be given to the collectors to admit this article free from duty.

" New-York, Feb. 25th, 1811."

Here the business ended in Congress, under a belief, on the part of the members of the committee, that the treasury department would give a favourable construction in this respect the act which imposes duties on goods, wares and merchandize, brought into the country. This act allows *lapis calaminaris*, which is but an ore of zinc, to come free. The same privilege is extended to brass tutenague, which is an alloy of zinc. Old pewter is received with the same indulgence, and this may be considered as another mixture, of which zinc constitutes a part. Tin, in pigs and plates, is also exempted from the payment of duties. Copper, in plates, pigs and bars, enjoys the same liberal privilege. Brass-wire is also free, and this is another modification of zinc. Old copper, in like manner, is admitted without payment of impost. Nor is metallic antimony charged with any duty. With all this fostering care towards the metallic arts, zinc, though admitted in so many ways under other names, cannot be received in its own name.

That this subject may be the better understood, and freed as much as possible from its intricacy, we insert the letters of Mr. J. Curtis to the secretary of the treasury, with the replies of the latter.

Mr. Curtis to Mr. Gallatin.

"New-York, April 16, 1811.

"SIR,—In the early part of the last session of Congress, I had the honour of forwarding to our representatives in Congress a memorial from the brass founders of this city, praying a repeal of the duty on *zinc* or spelter: the petition was referred by the house of representatives to the committee of commerce and manufactures. The Hon. S. L. Mitchill being one of that committee, wrote to me under date the 19th February, 1811, that he, and the gentlemen associated with him, considered that the case was already provided for, in the law admitting the importation of tutenague free from duty.

"Mr. Gelston, the collector of this port, says, that unless this article is entered as *tutenague* it must pay a duty.

"The proper name of the article is *zinc*. It is known in England among the exporters, by the name of spelter. They are necessitated to give it this name to enable them to export it. Spelter proper, is a mixture of brass and zinc, and used for the purpose of brazing and soldering. Zinc is also imported from the Indies, but under the name of *tutenague*, and admitted free from duty; the only difference between that imported from England and from the Indies, is, that the English is more pure, and the difference in value is about ten per cent. Tutenague is a mixture of block-tin, the regulus of antimony, and a small proportion of copper and zinc. The article is not known in this market, unless manufactured into spoons, tea-pots, &c.

"If, sir, you should be of opinion that the statute admits this article free from duty, your instructions to our collector will prevent our troubling Congress at the next session, and much oblige the manufacturers of brass, for whom, with considerations of high respect, I have the honour to be, sir, your most obedient humble servant,

"J. CURTIS.

"Hon. ALBERT GALLATIN, Esq."

To which the following answer was received:

"Treasury Department, April, 20th, 1811.

"SIR,—On the subject of your letter of the 16th instant,

I beg leave to observe, that, as according to your own statement, tutenague is a composition containing only a small portion of zinc, it cannot legally be admitted duty-free as zinc.

"I am, respectfully, sir, your obedient servant,

"ALBERT GALLATIN."

Whereupon a second letter was written in these terms:

"New-York, April 25, 1811.

"SIR,—Yours of the 20th inst. is at hand. By its contents I am led to believe my letter of the 16th was not fully comprehended. I must, therefore, beg your indulgence, while I state that the object of the brass founders is to obtain a repeal of the duty on *zinc*, which article, as I stated in my last letter, is imported from the Indies and England, and is absolutely necessary for the making of brass.

"Zinc is the metal from *lapis calaminaris*, or *stone calamine*, a semi-metal, unmixed. The lapis calaminaris is admitted free, and used for the purpose of extracting the metal, or zinc, which (metal) only is useful.

"The British government prohibits the exportation of zinc, therefore the exporters are obliged to give it the name of spelter.

"As our laws admit *lapis calaminaris* free, it must comport strictly with the spirit, if not the letter, that the metal (zinc) which is the article wanted, should be also free.

"You observe that, "as tutenague is a composition containing only a small proportion of zinc, it cannot legally be admitted duty-free as zinc." If I understand the above, zinc is free, and tutenague is dutiable; now, upon referring to the statute, I find that tutenague is made free, without regard to its composition.

"At our custom-house, tutenague is admitted free from duty; and zinc, if invoiced "tutenague," as it is when imported from the Indies, is also free; but zinc, if invoiced by the name of spelter, (which is the name given it by the exporters in England, to enable them to export it) pays a duty.

"I have the honour to be your most obedient humble servant,

J. CURTIS.

"A. GALLATIN, Esq."

To this, the following answer was returned:

"Treasury Department, April 29, 1811.

SIR,—Your letter of the 25th inst. is received, and you are correct in your criticism on mine of the 20th, which should read, "zinc being different from tutenague, cannot be admitted duty-free as tutenague." Unless zinc or spelter be proven to be the same substance as tutenague, they cannot, because tutenague is duty-free, be admitted without paying duty. I do not know myself what are the component parts of tutenague; but by your own statement it contains but a small portion of zinc; and if that be correct, I cannot understand on what ground the application, that the two substances should be considered as one and the same thing, is made.

"I have the honour to be, with consideration, sir, your obedient servant, ALBERT GALLATIN.

"Mr. JOSEPH CURTIS, New-York."

On which we offer a few reflections.

Charles Gustavus Ekeberg, first supercargo to the Swedish India Company, says, that tutenague is found in China, within the province of Wohnam, where it is called *pachyyn.* In its mineral state, its colour is bluish gray, and shines like an ore of iron. It is heavy; brittle when dug up; but hardening in the air. Tutenague is seldom found quite pure. The mineral melts easily. When it is roasted and fused, it emits a thick, offensive and unhealthy vapour. Bomare thought, that in consideration of these facts, tutenague was to be considered as the same substance with zinc.

Now as to zinc, all artists know that its metallic character is not uniform and constant, but liable to considerable variation. If, for example, you examine that which comes from the mine of Rammelsberg, near Goslar, or from that of Dalecarlia, in Sweden, you will observe, on breaking it, fibres or striæ resembling those in the fine antimony of Hungary; while in that which comes from the East Indies, under the name of tutenague, the parts are more brittle, and seem to be composed of a collection of plates, shining, hard, and almost cubic.

One of the older conjectures about tutenague was, that it was an *alloy of bismuth and zinc.*

Tutenague, is by almost every body considered merely as the name given in India to zinc. It is called also tutanego, and more recently teutania. On Mr. Engestrom's analysis, a tutenague ore from China, was found to contain in different specimens, from 60 to 90 per cent. of zinc, the residue was iron, with a small proportion of clay.

The same names are also applied to signify an artificial metallic compound of a white colour, brought from China, and called Chinese copper. The art of making this is said not to be known in Europe. It is very tough, strong, and malleable; and may be easily cast, hammered and polished. The better kinds of it are not more liable to tarnish than silver is. Experiments have discovered the three ingredients of this compound to be zinc, iron and copper. Some of the Chinese white copper is found to be merely a mixture of copper and arsenic.

Castelli, in his Lexicon, makes mention of *tutenague* as the name of a metal from the East-Indies, unknown to the Europeans; but quotes Robert Boyle's experiments on the ponderosity of fire, for some account of it. (Expt. 12.)

A Letter from R. SMITH, *Secretary of State, to the Hon.* JOSEPH B. VARNUM, *Speaker of the House of Representatives in Congress, dated Department of State, January 1st*, 1811; *and an abstract of the certificates issued from the Patent Office for alleged inventions and discoveries, from May* 1, 1805, *to the end of December*, 1810.

SIR,

IN pursuance of the resolution of the House of Representatives of the United States, dated the 7th ultimo, I have the honour of transmitting a list of the names of persons who have invented any new or useful art, machine, or composition of matter, or any improvement thereon, and to whom patents have been issued for the same, from this office, with the dates and general objects of such patents.

I have the honour to be, sir,
With the greatest respect,
Your obedient servant, &c.
R. SMITH.

To the Hon. the Speaker
of the House of Representatives of the United States.

(*Continued from our vol.* 10*th*, *p.* 105—222—323.)

1805.

Machine for cutting nails, brads, &c. Increase Kimball, May 1. Improvement in the grist mill, Joseph Copes, May 2. A close fire place, Horatio G. Spafford, May 3. Machine for raising water from a running stream, Frederick Lippart, May 3. In andirons, John Stickney, May 4. An iron wheel for transporting carriages, Robert Crane, jun. May 4. A felloe mill, Samuel Church, May 4. A metallic hone, John Houston, May 4. A cross cramp for four-wheeled carriages, Simeon Glover, May 4. A washing and scouring machine, Abraham Higham, May 4. In the physiognotrace, Daniel Atherton, May 4. Machine for raising and removing earth, Joseph Platt, May 4. A beaming machine, Allen Hill, May 6. Machine for removing earth, &c. Jacob Welsh, May 6. Bleeding with and breeding leaches, John Kunitz, May 7. Machine for sawing shingles, Isaac Baker, May 8. In glazing and polishing linens, &c. William Smith, May 9. In making cod oil for leather, George Poyzer, May 10. Machine for shelling and hulling clover seed, Michael Zorger, May 10. Method of making moulds for casting iron screws, &c. Ebenezer Lester, May 10. In manufacturing tin ware, Barnabas Langdon, May 10. In the sluice to convey the water to horizontal wheels, and in the manner of forming the wheels of cast iron, &c. James Humiston, jun. May 10. On Anderson's patent condensing tub, Henry Witner, May 17. In the bark mill, Thomas W. Pryor, May 21. Apparatus for making tiles, bricks, &c. William Hodgson, May 22. In the smut fanning mill, Thomas Pierce, May 24. Mode of making posts of clay for fencing, William Cooley, May 27. Machine for raising or projecting fluids, Daniel Tomlinson, May 27. Method of boiling, applicable to distilling, brewing, &c. Benjamin Eggleston, jun. May 27. In the mode of setting boilers of every description, Ebenezer Jenks, June 1. In planing by machinery, John Bennock, June 1. Planing machine for sawing bellows boards, &c. John Hinman, June 1. Method of separating, preparing and collecting the sulphate of pot-ashes into sal polychrestum, &c. Alexander M'Nitt, June 15. Improvement in mills and

machinery, Lewis Valcourt, June 25. Machine for ginning, carding and spinning cotton, John M'Bride, Aug. 8. Machine for grinding, sawing or rasping dye woods, John Mathews, Aug. 13. Machine for casting types, William Wing, Aug. 28. In springs for wheel carriages, William Wing and Henry Salisbury, Aug. 29. In tub mills, Charles M'Lean and Solomon Loomis, Sept. 25. A clay pipe for conduits, Samuel Bartlett, Oct. 1. In making shingles, Asahel A. Kelsey, Oct. 9. Manufacturing old junk or old rigging into oakum, Daniel French, Oct. 9. In casting ship bolts, Joseph Share, Oct. 28. In rafts, William Deane, Nov. 4. In cattle mills, La Paype (ainé) Nov. 4. Machine for raising water, Seraphim Bellij, Nov. 7. Do. for splitting skins, William Lillie, Nov. 9. In making salt, John Gilman Taylor, Nov. 13. Machine for shearing woollen or other cloth by water, &c. Friend B. Kellogg, Nov. 22. A distilling apparatus, Abraham Heistand, Nov. 27. Machine for preparing and hackling tow for paper or linen, James Tatterson, Dec. 7. Do. for washing, rinsing, and wringing clothes, William Johnson Fulsom, and John Hayden, Dec. 17. Rheumatic pill, George Barber Dexter, Dec. 18. A kiln for drying grain, William Poole, Dec. 20. In kilns for drying grain, James Abraham, Dec. 20. Machine for reaping grain, Samuel Adams, Dec. 28.

1806.

A rowing machine, Ebenezer Bryant, Jan. 13. A balance pendulum lock, Samuel Goodwin and Richard Gains, Jan. 22. Machine for making bats or frames for wool hats, Richard Gookins, Jan. 24. Machine for copying charts, landscapes, &c. Cephas Thompson, Feb. 5. A loom for weaving chip, Philip Bennet, Feb. 8. A spring pump for raising water, William Finn, Feb. 13. Machine for picking oakum, Michael Morrison, Feb. 14. Do. for making dough, George Richards, Feb. 14. In bridges, Theodore Burr, Feb. 14. A planing machine, Joseph Hawkins, Feb. 19. Improvement in gun carriages, Samuel Hawkins, Feb. 19. Machine for raising mud, John Eveleth, Feb. 21. Medicine called the essence of tansy, Israel Newton, Feb. 28. Machine for making brick, John F. Gould, March 1. In suspenders, Richard Howell, March 5. In evaporation, Thomas Arnold, March 5. In stoves, Samuel Dickey, March 7. In tilt hammers, John F.

Gould, March 8. A joining and planing machine, Joseph S. Mott, March 8. A balance pendulum lock, Richard Gaines, March 17. A hoisting machine, William Purden. March 19. In a cabouse, George Youle, March 21. For dressing flax, Elisha Mack, March 21. Preparing and welding cast steel to iron or other steel for tools, Daniel Pettibone, March 22. A fulling mill and washing machine, John Kennion, March 26. Carding machine to form batts for wool hats, Abner Guild, March 31. Machine for splitting skins or neats' leather, Stephen Payn, March 31. In diving machines, Richard Tripe, April 1. In cyder and bark mills, Isaac Quintard, April 5. In propelling boats, John Heavin, April 17. Machine for cutting straw, do. April 17. In saw mills, Joseph Quinby, April 25. In water wheels for mills, Ephraim Hubbel, May 1. In reducing calcareous matters into lime, Charles Varlé, May 2. In the steelyard, John Edwards, May 19. In scale beams and balances, do. May 19. A cabouse stove, apparatus for cooking and distilling, &c. George Youle, May 21. In windmills, John Cooper, May 22. In boxes for carriage wheels, James Gridley, May 23. Machine for shearing cloth, Beriah Swift, May 25. In the churn, Abner Wing, May 26. A washing machine, Reuben Buck, May 29. In boxes for carriage wheels, Levi Brown, May 30. Extracting salt from sea water, Standfast Smith, June 12. In facilitating the process of extracting salt from sea water, do. June 13. Do. do. do. June 13. In filtering impure water, wine, &c. Solomon M'Combs, Joseph Smith and Benj. D. Galpin, June 24. In making pantiles, William Harwood, July 3. A perpendicular boring machine, Roger Selden, July 7. Machine for facilitating the spinning of rope yarn, &c. Nathaniel Cutting, July 14. In making boots and shoes, &c. John Bedford, July 16. A swing cradle, Zachariah Mills, July 17. Anti-stream boat, William Wadsworth, July 17. A cover for buildings called artificial slate or tile, Thomas Woodsend, Aug. 7. Apparatus for improving the quality of cables, &c. Nathaniel Cutting, Aug. 14. Improvement whereby a beautiful yellow paint may be prepared, the Baron Alexis Carrendeffez, Sept. 2. Machine for raising vessels out of water to repair them, John Titus Morgan, Oct. 9. Apparatus for the sublimation of sulphur, George Barber Dexter, Oct. 9. Mixture to render all kinds of woollen cloth water proof,

James Pountrey Wightman, Oct. 21. In screens for freeing grain from dirt, seeds, &c. William Tullock, Oct. 28. In suspenders, Jonas Dawson, Nov. 6. A perpetual oven, James Deneale, Dec. 4.

1807.

A composition for covering and flooring houses, Louis De Niroth, Feb. 3. A Traverse sleigh, Levi Rogers, Feb. 4. Machine for winding cotton, David Brown, jun. Feb. 5. Machine for grinding, sawing and rasping dye woods, John Mathews, Feb. 6. A paper trimmer, Parke Shee, Feb. 7. Accommodating bolted truss for ruptures, John Beath, Feb. 7. In the auger, William Hale, Feb. 7. Machine for cutting brads, Jonathan Ellis, Feb. 10. Mode of making the bottoms of shoes and boots of metallic substance, Samuel Milliken, Feb. 10. A water tight swivel screw, adapted to steam engines, stills, &c. Abel W. Hardenbrook, Feb. 10. In making boots and shoes, William Montgomery, Feb. 11. The Egyptian lock, Abraham Ogier Stansbury, Feb. 11. Making charcoal from peats, Charles Fales, Feb. 11. A hemp and flax machine, Richard Button, Feb. 11. Method of making moulds for casting trundle heads, of any kind of metal, &c. Ebenezer Lester, Feb. 12 A fire place with a flat funnel, Abraham Fisher, Feb. 19. A tilting waggon, Abraham Hobart, Feb. 17. For carding fur and wool, for hats, Arnold Buffum, Feb. 21. In the grist mill, Ezekiel Hale, Feb. 22. Machine for cutting and heading nails at one operation, Jesse Reed, Feb. 22. Machine for working a trip hammer, with a perpendicular handle, Joel Fox, jun. Feb. 25. In making butter, Barnt G. Burtis and Gersham Burtis, Feb. 27. A washing machine, Richard R. Elliot, Feb. 28. Mode of making salt, Timothy Green, April 1. A pendulum screen, Lewis Dupré, April 1. A double forcing pump, Charles Colver, April 1. In the cabouse stove for cooking, &c. George Youle, April 1. In ploughs, David Peacock, April 1. Machine for dressing shingles and staves, Jeremiah M'Ilvain, April 1. Do. for cutting nails, Elisha Bigelow, April 1. Do. for propelling boats, &c. by oars, &c. James A. Pearce, April 7. Do. for raising stumps, &c. from the ground, Alexander Craig, April 15. In the application of bark for hats, caps, &c. Sylvester G. Whipple, April 17. In making fire brick, Ebenezer Jenks, April 17. In

main springs for carriages, Jonathan Mix, April 18. In the construction of bridges, Thomas Pope, April 18. In the steelyard, Barnabas Langdon, April 23. In an apparatus for, and mode of distilling, Abraham Weaver, April 23. In the splinter bar and swingle trees of carriages, to disengage the horses from——suddenly, Henry Dunlap, April 23. Applicable to fire places and stoves, Allan Pollock, April 23. In heating rooms, &c. &c. &c. do. April 24. A washing machine, Simon Willard junr. April 25. A washing, scouring and churning do. Thomas Beatty, April 25. In making ropes of any size, and lines, &c. John Sellers and Andrew Bartle, May 5. A gunner's quadrant, Charles Hammond, May 6. Machine for breaking and grinding bark, &c. Cornelius Tobey, May 7. Machine for making paper, Charles Kinsey, May 8. Machine for shearing cloth, Russel Dorr, May 8. In rigging vessels of every denomination, Stephen Sayre, May 9. In hanging curtains or blinds in coaches, &c. Peter Harvey, May 9. In shingling the roofs of houses, &c. Thomas Young, May 11. In lasts for boots and shoes, William Young, May 20. In the fire engine, Jacob Smith, junr. May 20. Mechanical spring buckle, John Green, May 20. In mills, Christian Hamaker, May 21. A washing machine, Josiah Cleaveland, June 6. A mortising machine, Simeon Glover and David Parmelee, June 8. In galvanism for salivating, &c. William Phœbus, June 9. In stills, Stephen Steward, June 20. In cotton gins, Obadiah Crawford, June 22. In machines for shearing cloth, Enoch Burt, June 23. In saw mills, Jacob Spofford, June 23. In churns, Reuben Buck, June 23. In the axle and box of carriages, Cyrenus Beach, June 26. In the filtering pot, Michael Freytag, July 1. In piano fortes, &c. &c. Ralph Shaw, July 2. Manufacturing wrought nails and brads, Jordan Dodge, July 8. In condensers in distillation, Thomas O'Connor, July 9. Machine for making pills, Webster Lewis, July 10. Machine for making wrought nails, &c. Jonathan Nichols, July 11. Mode of heating water in boilers of steam engines, by the rays of the sun, Matthew Longwell, July 11. In making Italian pastes, Maccaroni, Vermicelli, &c. John B. Sartori, July 13. Machine for cutting straw, Josiah Cleaveland, July 18. Do. Benjamin Connor, July 20. Washing machine, Ebenezer Jones, July 24. Apparatus for, and mode of cleaning

windows, Thomas Bruff, July 24. In preparing a vermifuge, Joseph Lehman, Aug. 11. In washing machines, Martin Lee and Timothy Barber, Oct. 1. A churning machine, Buel Cutler, Oct. 3. In stills, Edward Richardson, Oct. 3. Moulds for casting copper sheathing nails, &c. Thomas M'Ilwham, Oct. 6. In preparing green colouring matter or paint, Baron Alexis De Carrendeffez, Oct. 12. Mode of preparing leather for straps of suspenders, &c. Orange Webb, Oct. 14. Machine for planking hats and making cloth without yarn, Joseph Pitkin and Timothy Kimball, Oct. 19. In the cheese-press, Jesse Arnold, Oct. 26. Manufacturing sheet iron into funnel for stove pipes, &c. Richard Wheatly and James Beaumont, Nov. 4. In manufacturing iron, James Butland, Nov. 12. A plough harrow, Seth Vinton, Nov. 18. Manufacturing thimbles for the sails of ships, &c. Isaiah Jennings, Nov. 20. A guage setting machine for saw mills, Anson Blake, Nov. 27. In thrashing machines, Benjamin B. Bernard, Nov. 30. For cutting and heading nails, Simon Willard, Nov. 30. For thrashing and cleaning grain, Simon Willard, jun. Nov. 30. In the water wheel, do. Dec. 1. An improved still, William Thornton, Dec. 13. Machine for heading nails, Samuel Rogers, Dec. 15. A churning machine, John Scripture, Dec. 15. Manufacturing hoop and sheet iron, Jeremiah H. Pierson, Dec. 24. In the rolling and slitting mills, Isaac Pierson, Dec. 24.

1808.

In making and refining sugar, Antoine Boucherie, Jan. 8. Machine to facilitate the making of boots and shoes, Eli Barnum, Jan. 9. Machine for manufacturing flour and meal, Oliver Evans, Jan. 22. Nail cutting machine, Jonathan Hicks, Jan. 28. In fire places or open stoves, John F. Gould, Feb. 1. In the fanning mill for grain, &c. Samuel Dodge, Feb. 9. Machine for splitting leather and skins, William Bent, Feb. 24. In the plough, Hezekiah Harris, Feb. 24. In the common suction pump, Daniel Watson, March 4. In propelling boats, Philemon Heaton, Mark B. Boyes and Philemon Heaton, junr. March 4. Machine for manufacturing cordage and improving its quality, &c. Robert Fulton and Nathaniel Cutting, March 4. Machine for making combs, Phineas Pratt, March 5. In churns, Simeon Hays, March 8. A forcing pump with double ac-

tion, applied to engines, &c. Eleazer Cady, junr. March 9. A revolving churn, Nicholas King, March 10. In the churn, Stephen Stackhouse, March 11. In chimneys, Giles Gridley, March 13. In fire places, do. March 14. A washing machine, William Wadsworth, March 15. Machine for propelling boats, &c. do. March 15. Machine for grinding bark and dye woods, Obadiah Pease and Asher Donalds, March 18. In the cyder and cheese press, Ebenezer Benedict, March 21. For distilling or boiling water, Eli Barnum and Benjamin Brooks, March 21. A wheel to run under water, John Johnson, March 21. In churns, William W. Townsend, March 22. A fanning mill for grain or clover seed, &c. Oliver Barret, junr. March 23. A lever for turning wheels, for rowing boats, &c. Roswell Hopkins, March 25. Machine for trimming straw plat, for bonnets, Eleazer Smith, March 30. Mode of applying power and causing motion to machinery by the pendulum, Jedediah Tallman, March 31. An economical furnace or stove, Joseph Poudrell April 6. Cross cut saw machine, Thomas Cohoon, April 11. In lessening the friction in axletrees of carriages, &c. Robert Kilborn, April 12. In cheese presses, &c. Ephraim Warner, April 12. Machine for breaking and swingling hemp and flax, &c. Thomas Cohoon, April 13. In the screw press, do. April 14. In faucets for drawing liquor from casks, Ira Ives, April 14. Machine for smoothing and polishing paper and other substances, William Coolidge, April 18. Mode of striping allum dressed leather for shoe binding, &c. Samuel Frothingham, and Geo. Harris, April 20. A cylindric ruling machine, John Fairbanks, April 21. In the churn, Daniel Pierpont, April 22. In the spinning wheel, Timothy Cruttenden, April 23. In manufacturing hats, cloths, &c. from a fleece or sheet taken from a carding engine, without bowing, Roswell Pitkin, April 23. In the churn, Aaron Reed, April 25. In carriages for field artillery, David Cobb, April 25. In the churn, Nehemiah Howe, April 25. In preparing and making twisted whalebone whips, Joseph Reeve, April 25. Mode of impelling boats, water or land carriages, Benjamin Taylor, April 25. Machine for making rivets, Isaiah Jennings, April 25. For making oakum, Daniel Rider, April 26. A washing machine, Leonard Kennedy, April 26. Machine for shearing woollen and other cloths, Ebenezer Stowell, April 26.

The anglet for taking and laying down angles, Benjamin Dearborn, April 29. A washine machine, Elam King, May 14. In making pearl ash, in kettles, without the use of ovens, Reuben Ainsworth, May 14. The life buoy, or seaman's friend, William Flower, May 14. A friction roller door hinge, John Bailey, junr. May 16. In the construction of pumps, William Rhodes, May 16. A floating dry dock for cleansing the bottoms of vessels, do. May 16. In the churn, Simeon B. Willard, May 18. In pressing machines, Robert Pierpont Cunningham, May 21. In the application of the whip saw, Samuel Barber and Nehemiah U. Tompkins, June 1. In the double lever press for tobacco, &c. Caleb Johnson, June 3. Machine for rasping dye woods, Jesse Reed, June 3. In carriage springs, Enoch Ives and Jerry Hill, June 3. Apparatus for propelling boats across rivers by force of the current, Samuel Stilwell and Daniel T. Wandall, June 3. In washing machines, Martin Lee, June 4. Machine for washing, churning and getting out clover seed, &c. Robert Patton, June 13. Machine to cut and head nails, Joseph Jellef, June 14. In the chain bridge, James Finley, June 17. Thoroughbrace springs for carriages, Jonathan Mix, June 17. In stoves, &c. for heating rooms, Allen Pollock, June 17. In the cyder and cheese press, Ebenezer Benedict, June 18. A perpendicular washing machine, Ebenezer Jones, June 20. Machine for sawing stone, wood, &c. do. June 20. For shearing cloth, Simson Stewart, Ebenezer Hovey, and James Henderson, June 21. A hydrant for drawing water from aqueducts, David Burt, June 22. In the rectification of spirits, Osborn Parsons, June 23. In lighting the binnacle of ships, Winslow Lewis, June 24. In making conduit pipes, &c. from clay, &c. Robert Ramsey, June 24. An illuminator for lighting stair cases, &c. John Henry Ross, June 24. Folding or spiral springs for carriages, &c. James Armour, junr. June 27. Machine for slitting boards, plank, &c. Ezekiel Olds, June 29. A washing machine, Asahel E. Paine, July 1. In the churn, Dyer Cleveland, July 7. A pressing and boring machine, Robert Ramsey, July 9. In tanning, Samuel Parker, July 9. In currying and finishing leather, Samuel Parker, July 9. The universal vitriolic test, for making all kind of bank or other bills, Abel Brewster, July 11. A washing machine, Enos Trescott, July 11. Do. Theron Henry, July 11. Do. Thomas

Osgood, July 11. Do. Ebenezer Lister, July 11. Do. Dudley Loomis and Ira Millington, July 11. In the churn, Dyer Cleveland, July 11. In churns, Erastus Townsend, July 12. Machine for splitting skins, Isaac Cobb, July 12. Do. for cleaning rice, Jonathan Lucas, junr. July 12. In distilling, Eli Barnum and Benjamin Brooks, July 13. In funnels for filling vessels with fluids, Philip Apple, July 13. In the wind mill, Uzziel Geer, July 18. In rolling tub mills, Samuel Bartlett, July 19. For shaving and splitting leather, Martin Tullar, July 29. In churns, John Bolton, August 2. Machine for cutting straw, Elihu Hotchkiss, August 2. In the spinning wheel, Obadiah Seely, August 6. Machine for making wheels of all sorts, Jacob Coon, August 6. Do. for hulling and cleaning rice, and for many other purposes, John Thomas Ricketts, August 8. For elevating water at mills, &c. William Smith, August 12. Improvement in chain bridges, invented by James Finley, and John Templeman, August 16. In carriage springs, Joshua Cone, August 26. Machine for raising water, William Barker, August 26. A washing machine, Stephen W. Dana, August 30. In wheel carriages, do. August 30. A washing and churning machine, Stephen Winchester, August 31. Machine for pressing straw or chip hats, &c. Samuel Prince, August 31. An elastic chair, Samuel Gragg, August 31. A geometrical interest table, Gersham Cobb, Sept. 7. A washing and churning machine, Garry Bishop, Sept. 7. A rocking churn, Dan Parmele, Sept. 8. Machine for heading nails, Asaph Chandler and Silas Shepard, Sept. 16. A fanning and winnowing mill, Benjamin Atwell, Sept. 19. A pump bellows for furnaces and forges, Isaiah Jennings, Sept. 20. A ratchet wheel, Marcus B. Parmelee, Sept. 21. In making brick, Asa Frost, Sept. 21. Machine for grinding bark, for tanning, &c. Paul Pilsbury, Sept. 22. In the taylor's bench, William Burtis, Oct. 3. In lightning rods, Elisha Calender, Oct. 3. Machine for making balls and shot by pressure, Thomas Bruff, Oct. 5. In military knapsacks, John P. Lherbette, Oct. 7. In churns, Samuel Moon, junr. Oct. 24. In ovens, John West, Oct. 27. A black pigment or mineral black for printing ink, or painting in oil or water, Jacob Cist, Oct. 28. A rarefying air stove for warming rooms, &c. Daniel Pettibone, Oct. 28. In looms for weaving of every kind, Charles Cooper, Nov. 4.

Machine for separating grain and seeds from straw, &c. Randall Wallis, Nov. 9. Machine for scrubbing or scouring floors of houses, &c. Simon B. Willard, Nov. 17. In refining lamp oil, Eli Fourestier, Nov. 17. In stills and rotary steam engines, Stedman Adams, Nov. 21. In boots and shoes, Samuel Chamberlain, Nov. 21. In M'Comb's horizontal, re-acting water wheel, Joel Farnham, Nov. 23. In ploughs, Richard B. Chenoweth, Nov. 25. A rolling wheel on an inclined shaft, Stephen Mirick, Nov. 30. A churn and washing machine, John Devotie, Dec. 5. A mill for breaking plaister of paris, &c. William Brown, Dec. 8. In grist mills, Rufus W. Adams, Dec. 8 An elastic trace and brace, by connected springs, Benjamin Giddins, Dec. 10. Machine for rolling and plating iron, and cutting nails, Stephen Couch and Asa Towne, Dec. 10. In the churn, Luther Jones, Dec. 10. In still tubs, Isaac Bennitt, Dec. 12. Machine for dressing shingles, Robert Nicholson and Thomas Nicholson, Dec. 13. An alarm bell for fire engines, James P. Parke, Dec. 19. In the cheese press, Levi Martin, Dec. 19. A double boiler for distilling, Anos Gunn, Dec. 19. In casting pipes or tubes, Willard Badger, Dec. 26. Mode of suspending or hanging pleasure carriages, &c. Joseph Henderson, Dec. 26. In the cheese press, Hezekiah Dickerman, Dec. 27. In distillation, John Dimond, Dec. 28. A geer press for pressing cheese, &c. Hazen Erwin, Dec. 28. The vegetable pulmonic detergent, George Rogers, Dec. 31.

(To be continued.)

Proceedings relative to a National University, in a letter from SAMUEL L. MITCHILL, *to his Excellency* DANIEL D. TOMPKINS, *Governor of New-York, Chancellor of the University, &c. &c. dated Washington, 26th Feb.* 1811.

DEAR SIR,

ONE of the pieces of service which I have had to perform since I have been here was, to consider as chairman of a select committee, that part of the President's message of the 5th Decem. 1810, which relates to the establishment of a seminary of learning under national patronage, at Washington. It is in the following words :

"Whilst it is universally admitted that a well instructed people alone can be permanently a free people; and whilst it is evident that the means of diffusing and improving useful knowledge form so small a portion of the expenditures for national purposes, I cannot presume it to be unreasonable to invite your attention to the advantages of superadding to the means of education provided by the several states, a seminary of learning, instituted by the national legislature, within the limits of their exclusive jurisdiction, the expense of which might be defrayed, or reimbursed, out of the vacant grounds which have accrued to the nation within those limits.

"Such an institution, though local in its legal character, would be universal in its beneficial effects. By enlightening the opinions; by expanding the patriotism; and by assimilating the principles, the sentiments and the manners of those who might resort to this temple of science, to be re-distributed, in due time, through every part of the community; sources of jealousy and prejudice would be diminished, the features of national character would be multiplied, and greater extent given to social harmony. But, above all, a well constituted seminary, in the centre of the nation, is recommended by the consideration, that the additional instruction emanating from it would contribute not less to strengthen the foundations, than to adorn the structure, of our free and happy system of government."

This subject has undergone deliberate investigation. An opinion prevails that Congress ought not to undertake any thing of this kind. A report to this effect was drawn up by me, as directed by the committee. It has been printed by order of the house. I send you a copy of it, with a request, that as Chancellor of the University, you would lay it before the regents for information.

The reason of my sending you this document is, that it may be understood in the state, that a National University will not be established. At least the erection of such an institution is indefinitely remote; and there is no prospect whatever of its success, until public opinion shall undergo a great change.

The natural consequence of such a decision is, that the authorities extant within the respective states, being informed thereof, may redouble their exertions in the promotion of literature and science. Every thing now depends upon

those institutions; and I am confident, the knowledge of this fact will have its proper effect on the minds of those who preside over the great interests of learning in New-York.

While I have the pleasure of assuring you, that every session of Congress which I attend, affords me a rich harvest of scientific knowledge, I enjoy also the satisfaction of renewing the assurance of my high consideration and esteem.

SAMUEL L. MITCHILL.

Report made to the House of Representatives on the 18th February, 1811.

"In obedience to the order of the house, the committee has considered the important matter referred.

"An university, or institution for the communication of knowledge in the various departments of literature and science, presents to the mind, at one view, subjects of the most pleasing contemplation.

"To a free people, it would seem that a seminary in which the culture of the heart and of the understanding should be the chief objects, would be one of the best guards of their privileges and a leading object of their care.

"Under this conviction, the patriotic spirit of WASHINGTON led him more than once to recommend, in his speeches to Congress, an attention to such an undertaking. He even bequeathed a legacy for the National University; which, he persuaded himself, would at some future day be brought into being. Two other Presidents have subsequently presented the subject to the legislature, as worthy of special consideration.

"Authorities so respectable, in favour of a scheme so desirable, carry with them great weight. A central school at the seat of the general government, darting the rays of intellectual light, or rolling the flood of useful information throughout the land, could not fail to make a strong impression. A noble and enlarged institution may be conceived to impart to its pupils the most excellent instruction, and, by properly qualifying persons to become teachers and professors, to introduce an uniform system of education among the citizens.

"On weighing these and other advantages, it was nevertheless necessary to examine whether Congress possessed the power to found and endow a National University.

"It is argued, from the total silence of the constitution, that such a power has not been granted to Congress; inasmuch as the only means by which it is therein contemplated to promote the progress of science and of the useful arts, is by securing for limited times, to authors and inventors, the exclusive right to their respective writings and discoveries. The constitution therefore does not warrant the creation of such a corporation by any express provisions.

"But it immediately occurred, that under the right to legislate exclusively over the district wherein the United States have fixed their seat of government, Congress may erect an University at any place within the ten miles square ceded by Maryland and Virginia. This cannot be doubted.

"Here, however, other considerations arise. Although there is no insuperable obstacle to the incorporation of trustees for such a purpose at the city of Washington, serious doubts are entertained as to the right to appropriate the public property for its support. The endowment of a university is not ranked among the objects for which drafts ought to be made upon the treasury. The money of the nation seems to be destined for other uses.

"The incorporation of an university, without funds, appears to be a fruitless and inefficient exercise of the legislative power. There is indeed some personal estate, which would devolve upon such a body, on the moment it should be constituted. And more may be reasonably expected from legacies and other donations. But these sources of revenue are too scanty and precarious to encourage reliance in the present case. It is better not to legislate, than to enact a statute destitute of the means of execution.

"The matter then stands thus: the establishment of an university upon the enlarged and magnificent plan which would become the nation, is not within the authorities delegated to Congress. And the erection of a small and ordinary seminary, with a pompous and imposing title, would not become its dignity. Still, if at any time legislative aid should be asked to incorporate an academic body, for the local benefit of the inhabitants of Columbia, and with funds of their own raising, there can be no doubt, the application would be regarded with kindness, as in other cases. Yet, it

must be remembered that this is a proceeding wholly distinct from the endowment of a National University, with the treasure of the United States, which appears to be destined, in its appropriations, to other and very different purposes.

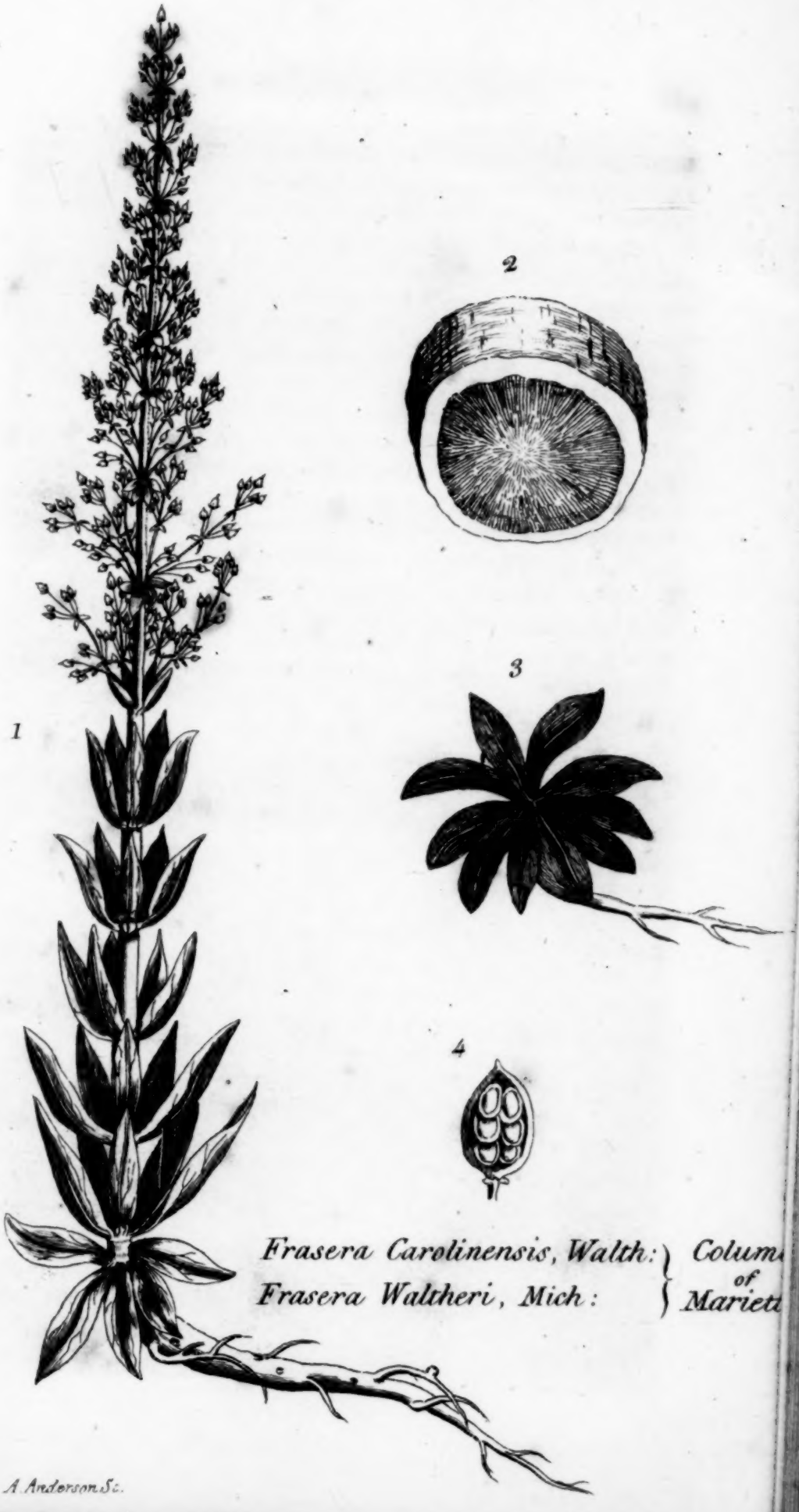
"The part of the message before the committee proposes, however, "to institute a seminary of learning by the national legislature, within the limits of their exclusive jurisdiction, the expense of which might be defrayed or reimbursed out of the vacant grounds which have accrued to the nation, within those limits." On inquiring into the value of these public lots, they fall so far short of the sum required for the object, that if there was no constitutional impediment, this could not be relied upon, on account of the smallness and unproductiveness of the capital they embrace.

"Whereupon the committee does not find itself authorized to recommend the adoption of any measures relative to the subject referred."

Information concerning the FRASERA CAROLINENSIS, *otherwise called the* AMERICAN COLUMBO PLANT: *in a letter from Dr.* S. P. HILDRETH, *of Marietta, in Ohio, dated Marietta, July* 30, 1810. *(With a figure.)*

DEAR SIR,

FROM various incidental causes, I have been unable to send you a description of the Columbo Americana till this summer; and now the drawing is materially defective, in being taken upwards of thirty days after the blossoms had fallen. Last summer, I went nearly twenty miles to see the Columbo in blossom, but was disappointed. The people who lived in the neighbourhood informed me, it would be in bloom about the middle of July. This summer, with much satisfaction in anticipation, I went at the time, and lo! it had been out of blossom more than a month. Thus was I again disappointed, by the careless indifference of man to one of nature's fairest productions. However, I have taken a drawing of the plant as it now appears, thirty-five days after the blossoms have fallen. As I am but an indifferent artist, the drawing is not so nice as could be wished, but I believe it is tolerably correct. It is on a scale of one



Frasera Carolinensis, Walth: } Colum
Frasera Waltheri, Mich: } of
Mariet

A. Anderson Sc.

inch and two tenths of an inch to the foot. The Columbo Americana is one of the most regular and elegant plants I have ever seen, and when in full bloom, must be really beautiful. The soil where this plant grew, is a light, rich loam; the land, in gentle swells; the growth, white oak, intermixed with white thorn, and tufts of prairie grass. The stalk, when full grown, is rather over seven feet in height, and most elegantly proportioned. It is externally covered with a smooth delicate membrane, of a deep purple colour nigh the root, and growing lighter as it ascends to the top of the plant. Beneath this is a pulpy coat, fibrous and vascular: within this is a coat entirely ligneous, which is the main support of the stalk; the remaining part is medullary, and completely fills the woody circle. The Columbo Americana is a triennial plant. The radical leaves, when it springs from the seed, are five in number: these live through the winter, and the following spring five more are added. The third spring it sends up a stalk, from which, five whorls of cauline leaves shoot when pentandrous, and four, when tetrandrous, before it puts out any flowering branches. The cauline leaves are verticillate, glabrous and lanceolate: the branches are axillary, upright, and of the same number as the leaves, from the basis of which they immediately rise, and send out opposite axillary peduncles. From where the flowering branches commence, to the top of the plant, when pentandrous, there are ten whorls or joints, growing regularly, less to the apex, which ends in five peduncles.

The following description is from Dr. Drake of Cincinnati. "It is sometimes found pentandrous, at others tetrandrous, always monogynous. The stamina are erect, the antheræ deeply cut, longitudinally on both sides, and fixed obliquely. The style is simple, erect, and longer than the corolla: the stigma is somewhat bilobed. The calyx consists, when the plant is pentandrous, of five, and when tetrandrous, of four ovato lanceolate permanent leaves. The corolla has four or five lanceolate petals, with a nectariferous, radiated spot of bristles in the centre of the superior surface of each."

The root, as soon as it penetrates the earth, shoots off horizontally, and when full grown, is from eighteen to thirty inches in length. Where it makes the horizontal turn, it is two inches in diameter, growing regularly less, to its termination. Its branches are not numerous. Nigh the surface

it is rugose and sulcated. Its colour in the young plant, is a light yellow, and the root solid and brittle. After the plant throws up a stem, the root becomes softer in texture, and less bitter.

The proper time for collecting it, seems to be in the spring of the third year. The seeds are twelve in number, contained in an ovato, lanceolate capsule; being themselves ovate and flat. A longitudinal section, or full grown capsule, with the appearance of the seed, is represented No. 4. A drawing of the plant in the second year is represented No. 3.; and a section of the root, nearly as large as the original, No. 2. From what experiments I have made with American Columbo, I am induced to believe it fully equal, if not superior to the imported. It is in common use here, and has in one instance, in the heat of summer, put a stop to a wide and fast spreading gangrene, on one of the lower extremities, by internal use, and external application, when bark and other remedies had failed.

With much respect, I am your friend
and well wisher,

S. P. HILDRETH.

HON. DR. MITCHILL.

Remarks on the proximate cause of INFLAMMATION, *with an attempt to establish a rational plan of cure. By* ALEXANDER H. STEVENS, A. M. *of New-York.*

Seat of Inflammation.

INFLAMMATION may take place in any part of the body, in which there are vessels not in their healthy state, carrying red blood. It arises most frequently in parts, which have the greatest number of such vessels, allowing readily of distention, and which are farthest from the centre of the circulation. The nails, hair, and cuticle, not being vascular, are never attacked by it. The bones, medullary substance, tendons, &c. are not so often the seats of it as the cellular tissue, the muscular fibre, and the glands.—Of secreting surfaces, which are in general more liable to inflammatory affections than nonsecreting surfaces, the mucous are perhaps the most obnoxious to its influence.

Anatomical account of the parts concerned in Inflammation.

The heart is an organ entirely muscular. The arteries proceeding from it are partly muscular and partly ligamentous. As we descend from the larger to the smaller branches, the ligamentous coat diminishes more in proportion to the size of the artery, than the muscular one. Mr. Hunter has conjectured that this last exists alone, in the smaller arteries: the ligamentous coat being entirely wanting in them. The large veins have a pulsatory motion; whence it is inferred, that they possess muscular fibres. But the reverse of what exists in the arteries, is found to obtain in them; for the largest seem to possess the greatest, and, perhaps, the only share of muscular power.

The design of this arrangement is evident. The blood, as it comes immediately from the heart, has a sufficient impetus to render unnecessary to its propulsion the exertion of much muscular power. But as it proceeds onward, through the arterial ramifications, it gradually loses its momentum, from the resistance it meets with by friction against the sides of the vessels. Muscular power thus becomes more and more necessary to its motion; while, at the same time, the increased area of its channels, does not require it to advance with its former velocity, in order to the passage through them, of all the blood coming from the heart; according to a well known principle in hydraulics.

As elasticity is that property of bodies which disposes them to resume their shape, after it has been altered by the application of any power, with a force equal to that which produced such alteration; it is evident, that so far as the ligamentous coat of the arteries possesses this property, the momentum of the blood, which had been opposed, during their expansion by its elasticity, is returned by the contraction of the vessels, with the force of this power.

If there be no fallacy in this view of the subject, it would appear that the elastic coat of the arteries is not directly concerned, either in retarding, or accelerating the motion of the blood. Its action is entirely through the medium of the muscular coat; moderating that distention, which a diminution of the muscular power of the capillaries, or an excessive action of the heart and larger vessels necessarily causes; and obviating that tendency to obliteration in the minute arteries, which an increased exertion of

their muscular power over the counteracting force of the blood, *a tergo* would otherwise occasion.

The first of these states of the vessels, is denominated inflammation. The latter is well exemplified in those appearances which we observe in the cold stage of febrile diseases; and which, I presume, exist in the minute vessels, previously to the occurrence in them of inflammation; whether induced by the application of topical stimuli, or other causes. It is attended by diminution of bulk and heat, and by paleness, obstruction of perspiration and secretion. For the want of any term in our language to express it, I shall call it the *anaimatous* state of the vessels.

Dr. Rush mentions, in his lectures, violent cases of ophthalmia, in which no redness, or indeed any other symptom of inflammation, except great pain, was perceived. Coagulable lymph is not secreted to unite solutions of continuity in any part of the body, until a moderate degree of inflammation has supervened. There are acute febrile affections of the liver, so violent, or in which, as Dr. Rush says, the excitement is so far beyond the point of inflammation, that no secretion of bile or appearance of inflammation is perceived. By bleeding, and the pursuance of the antiphlogistic regimen, inflammation is brought on. There are many such instances upon record, which it would be useless to enumerate. It will be allowed, that there is an affection of the sanguiferous system different from inflammation without indeed any of its symptoms; but more severe and fatal. This, I conceive, in a lesser degree, to take place after every application of the remote causes of inflammation. It is usually of so transient a nature as to pass unobserved, but in the cases mentioned by Dr. Rush, and others, it attracted particular notice from the violence of the symptoms, and from the apparently natural state of the parts. These were cases of the *anaimatous* state of the vessels. The excitement of the capillaries was not *beyond* inflammation; but on the other side of the scale.

To establish these positions, I may premise, that the phenomena of organic life irresistibly lead us to agree with Brown, that all positive agents are stimuli,—that the uniform effect of all stimuli is, first, to increase, and afterwards, to diminish, excitement. From these well established data, I proceed to lay down and illustrate a few propositions, upon the most simple affections of the vessels:

viz. the states of the capillary vessels dur'ng the periods of *anaima* and inflammation. Let us suppose some topical stimulus, such for instance, as fire, spirits of turpentine, or electricity, to have been applied.

Prop. 1. The state of *anaima* is the first state of the vessels after the application of local stimuli.

Demons. The effect of the stimuli, which induced inflammation, must be, primarily, to increase the action of the vessels to which they are applied. This increased action must induce paleness, diminution of bulk, and a train of symptoms which indicate the *anaimatous* state of the vessels. Because the office of the vessels is to propel the blood onwards, and, therefore, the greater their action, the more quickly will the blood pass on; and hence, with a given supply of it, little will remain in the inflamed vessels.

It is surprizing that the state of inflammation should, in place of this *anaima* have been considered to be the first effect of topical stimuli. One would have thought that physicians, enlightened by the torch which Brown so brilliantly displayed, would not have passed over that state of the vessels, which the fundamental principles of his doctrines so incontestibly prove to exist.

To this first proposition, which I have endeavoured to establish, it may be objected, that if this state of *anaima* really intervene, between the application of local stimuli and inflammation, how has it happened to have passed so much unnoticed. The objection, I trust, may be easily removed. I have observed, that the smallest capillaries possess the greatest share of muscular fibre, and the larger vessels the greater proportion of ligament in their composition.

Now, muscle is irritable, and ligament is not so. When local stimuli, therefore, are applied, the smaller vessels at first will be most excited, and, consequently, run soonest into a state of debility. Hence it is, that the state of redness and inflammation so soon succeeds this loss of equilibrium between one set of vessels, and that immediately next it, in magnitude, as to have been erroneously thought to be attended with increased action; or in other words, to be a *primary* effect of the application of stimuli. When fire, or turpentine, &c. is applied to the skin, it affects directly the most minute vessels. The others are influenced by sympathy entirely. But there are other agents, such as electricity and galvanism, which are conducted by the

nerves of a part, so as to affect with an equal force, *all* the vessels in its neighbourhood: and when these are applied, as I have often had occasion to witness, they do not so quickly induce inflammation, as some other topical stimuli of less power.

Prop. 2. To the *anaimatous* state of the vessels succeeds a state of relative, and, in most cases, of absolute debility of the smaller arteries; which is inflammation.

Demons. To ascertain the last of these positions, so much the reverse of most opinions which are now prevalent on the subject, I determined to repeat some of the experiments of Dr. Wilson, and to make such others as might seem best calculated to throw light upon this subject.

As it is acknowledged on all hands, that the action of vessels, more particularly of the capillary arteries, is to propel the blood forward in the course of the circulation; so it is equally true, that the greater the action of these, the less will be the quantity of blood in them; and hence a partial or total obstruction can arise only from debility. If this be allowed, the inference from the following experiments will be clear and decisive.

I omit altogether reasoning a priori on the state of the vessels during inflammation, though it will readily occur to every person, that inflammation is a state of debility of the minute capillaries, if the observations under the head of proposition 1st prove, as I believe they do, that the state of increased action, preceding inflammation, is attended with paleness, and increased velocity of the blood.

Exp. 1*st.* The web of a frog's foot, which had been previously exposed to a considerable degree of heat, so as to produce inflammation, was placed in a solar microscope of great power; and the image, which was received on a white surface, placed in a suitable position, displayed very beautifully the circulation of the blood in the web. That I might not be deceived by my own expectations, as to the probable result of the experiment, I directed my assistant to observe the comparative velocity of the blood through the small inflamed spot and the adjacent parts of the web. Although totally ignorant of what would probably take place, he immediately remarked to me (who was engaged at that time in adjusting the web) that "the picture seemed to be moving all over;" but much less in a spot about the centre of the image which was more opaque than the rest. This

part he pointed out to me, and I readily recognised in it that through which I had previously run a hot pin. He compared the appearance altogether, to the motion of a stratum of small shot on the bottom of a pail, when turned round and then suddenly stopped, and said he could make the two appearances precisely similar, if he were to flatten a few shot in the centre of the stratum so as to prevent them from moving so much as the rest.

Exp. 2*d.* The same web of this frog was immersed for a short time in hot brandy, and again exposed to our view through the microscope. The motion of the globules was not at all discernible through the inflamed spot ; but in the parts next it, which had not become opaque, and where the inflammation had just commenced, the retardation of the blood was perfectly evident.

Exp. 3*d.* I made another experiment with a healthy web, in order to ascertain if the motion of the blood in the vessels about the parts which I had inflamed, was similar to that in a healthy web. I expected to have found it different ; but the most careful examination I was able to give the subject, did not enable me to say that it was so; the globules seemed to move with equal velocity in each.

Exp. 4*th.* The day following experiment 1*st.* I used the web through which I had passed a hot pin, &c. to learn the state of the circulation through it. The semistagnation and opacity had extended over a larger surface than before. Through the whole of the web, indeed, the motion of the blood was seen to be more slow than on the day preceding. I applied spirits of turpentine. This evidently spurred forward the globules for a moment, but they soon resumed their former inactivity.

Exp. 5*th.* I endeavoured to view the motion of the blood through the semidiaphanous skin of a frog's belly, by detaching it from the parietes of the abdomen. This was done in such a manner as to cause no visible effusion of red blood. The experiment however failed, as the part did not prove sufficiently transparent for my purpose.

Exp. 6*th.* The transparent membrane of the tail of a small fish was placed in the microscope, in order to see the state of the circulation. But the animal died so quickly, that the experiment was completely frustrated.

I regretted very much my want of ability to procure a microscope of greater power than those which I made use

of. To this circumstance I attribute my not having seen the motion of the blood in the *anaimatous* state of the vessels: as they did not *permit* the entrance of globules of sufficient magnitude to be visible.

The experiments which have been related, more particularly the first and second, were repeated several times, and the circulation viewed by indifferent persons, all of whom agreed that a partial stagnation took place in the inflamed web. I have to regret, however, that the season of the year did not allow me to pursue my inquiries to the extent I wished. They seem to me, however, very completely to establish the fact for which I contend—*viz.* That the blood circulates unnaturally slow in inflamed parts: and from this is derived my chief support of the second proposition, that inflammation is a state of debility of the minute arteries.

Inflammation may take place in cases where the action of the heart is greater than in health—where it has just its healthy force—and where its action is weaker than in health. Constituting,

1. Inflammation with fever;
2. Inflammation without fever;
3. Passive inflammation.

Inflammation cannot be considered a state of the vessels in which the excitement of the capillaries is merely diminished. It is accompanied by morbid action. This, I trust, has been rendered sufficiently clear. (Vide p. 18, et seq.)

We may therefore define inflammation to be a *state* of *relative debility* of *the small vessels*, *attended* by *morbid action.*

An account of the Pathognomonic Symptoms of Inflammation.

The *swelling* of inflamed parts, arises from an increased quantity of blood in vessels, not naturally destined to contain it. This is proved by its following too immediately the application of exciting causes, to render possible the formation of new vessels, and where no breach of continuity can be suspected to give rise to effusion. Mr. Hunter froze the ear of a rabbit, and thawed it again; and inspecting it with a microscope, he perceived a want of transparency, which was justly attributed to the secretion of coagulable lymph. This must, no doubt, in this case, have occasioned in part, the increased bulk of the ear. But in the first

stages of inflammation, it cannot be secreted soon enough to cause any of the swelling.

The *redness* of inflamed parts has been attributed to a want of power in the vessels to abstract carbone, or to produce those changes which distinguish venous from arterial blood.

In man, the colour of inflamed parts differs from that of the mass of the blood, much less than in cold blooded animals. The blood of the arteries of fish, is of a bright vermilion; while that of inflamed parts in them, is of a pale yellowish red. Did not partial obstruction exist, the anastomosing and other arteries, around inflamed spots, particularly if they were small, would so mix the blood, that their peculiar colour would soon be lost in that of the general mass.

The *throbbing* so evidently arises from the passive distention of the small vessels, that it needs no explanation.

The *heat* of inflamed parts is either relative or absolute. The relative heat varies much, according to the nature of the part affected. It is less in secreting parts than in others. Secretion induced in an inflamed surface which naturally secretes, diminishes the sensation of heat. The absolute heat seldom rises higher than five or six degrees above the natural standard; though the sensation in the part itself, as well as that which it communicates to the hand, would lead us to suppose it much greater.

The heat of inflamed parts is sometimes below the natural standard; a livid colour at the same time attends. This occurs in commencing, and in actual mortification; and affords strong evidence of the truth of my proposition. When the motion of the blood is so slow, that the increased quantity is more than counterbalanced by its diminished velocity, then it is, that the heat begins to abate. Total obstruction now takes place. The last act of the vessels is to convert this obstructed arterial into venous blood: the part is then livid, cold, and mortified. How perfectly do these phenomena coincide with the view of this subject that I have exhibited! How irreconcilable with the notions of the present day, on the cause of inflammation! Increased action of the vessels, and a corresponding velocity of the blood, are said to take place, and constitute inflammation; and yet a cessation of action, and an entire obstruction are the very first consequences we are taught to dread!

Inflammation causes *pain* by the distention of the nerves, and in part too, by the morbid action which accompanies it.

Prop. 3. Inflammation, by causing obstruction, may occasion a febrile action, in which the excitement of the heart will further increase it by distending, and debilitating the capillary vessels. In such cases, inflammation may arise in new parts, without any previous state of *anaima*, other than the *relatively anaimatous* state of health.

The indications for the cure of simple inflammation accompanied with fever, are:

1. To remove the causes of debility; which is done,

By diminishing the vis a tergo, by general blood-letting, by the application of blisters near the inflamed part, and what is called the antiphlogistic regimen; and

By removing the blood already in the part, by the use of leeches, cups, &c. and by puncture, if the blood be extravasated. Following the use of these remedies, by the application of stimulants and tonics, in order

2. To strengthen the vessels.

Emollient poultices will also be useful, if occasion require them,

To remove the tension of the vessels.

We are likewise to endeavour

3. To establish the healthy action, which is done by the means used to restore the lost tone of the vessels, viz. the application of stimulants and tonics.

When inflammation occurs without fever, topical remedies alone are necessary.

In passive inflammation, in addition to the means above mentioned, we must exhibit general stimulants and tonics.

These heads contain only the important indications for the cure of inflammation when we aim at resolution, and these are particularly derived from the theory which I have endeavoured to establish. Those which relate to the treatment of suppurative and other species of inflammation, may be found in all practical works on the subject.

I cannot help remarking, that the means for the production of resolution, which experience has proved to be best, exemplify very beautifully, the theory which has been offered; while, on the contrary, the single fact, that LOCAL STIMULI ARE OUR VERY FIRST AND BEST APPLICATIONS TO INFLAMED PARTS, is, of itself, a host of reasons against the prevailing doctrines on this subject.

Experiments and Observations in defence of the doctrine of Cutaneous Absorption. *By* Josephus Bradner Stuart, *of Albany.*

THE doctrine of *Non-cutaneous Absorption* having been very ably supported, many have been induced to adopt it; and some have even supposed it established beyond the reach of controversy. But after having heard it ably advocated, and after having attentively perused the different papers published relative to it, though I was not persuaded by the eloquence of the former, nor convinced by the experiments and arguments of the latter, yet I was unable at that time to refute them. Having been early taught that "one truth in medicine is worth a thousand unconnected lifeless facts," I could not conscientiously rest my opinion on other men's bare assertions, however great their eminence, either as physiologists or physicians. I resolved, therefore, to avail myself of my first leisure moments, to repeat Dr. Mussey's experiments, with madder, (the correctness of which had been by some doubted) and at the same time try such other articles as I might deem most proper, and to rest my opinion on the result of those experiments. Accordingly, having engaged my ingenious friend, Mr. Thos. P. Jones, to assist me, on the 17th of March, 1810, I instituted a course of experiments with the rubia tinctorum, rad. rhei, rad. curcuma, and garlic.

Experiment I.—At 15 minutes past 4, P. M. having evacuated my urine, I immersed myself, my head and neck excepted, in a strong watery infusion of *rubia tinctorum*, and remained in it two hours and a half. The temperature of the atmosphere was 34°, that of the bath fluctuating from 82° to 90°. Urine was drawn at the expiration of 1, 3, 8, 13, 15, 18, 26 and 37 hours after leaving the bath. The first portion was very pale and unusual in quantity; all the other portions, except the last, (which was of its natural paleness) were much above the natural colour, particularly the 2, 3, 4, and 5 portions, which were of a higher colour than common Madeira wine. On adding a solution of the carbonate of potash to the urine drawn immediately before entering the bath, and to that drawn one hour after leaving it, no perceptible change whatever took place in the colour of either of them. Added to the other portions, it

instantly changed the colour of all of them except the last, to a bright cranberry red ; but the portion drawn at the expiration of 8 hours, gave the highest colour. The last portion, or that drawn at the expiration of 37 hours, was not in the least changed by the addition of potash, any further than water, or any similar fluid, would weaken the colour by diluting it. The different portions of urine which were sensibly changed by the addition of the potash, on standing 8 hours, deposited a copious white sediment, which was not the case with the other portions. My pulse, while in the bath, became slower and fuller, and I felt considerable languor and slight head-ach, for two or three hours after leaving it.

Experiment II.—With a view to ascertain whether the change of colour, produced by the addition of potash to several of the portions of urine, as above mentioned, depended on the presence of the colouring matter of madder—March 18th, I added to a portion of urine drawn before entering the bath in the preceding experiment, a watery infusion of madder, until it became of the same colour as that drawn three hours after leaving it. On adding the potash to this, it immediately assumed the bright cranberry red colour. The potash produced the same change on a weak infusion of madder in common pump water.

Experiment III.—March 19th, at half past 9, A. M. Mr. Jones, having evacuated his urine, immersed himself, his head and neck excepted, in a strong watery infusion of the *rad. rhei* and remained in it for two hours and a half. The temperature of the atmosphere was 40°, that of the bath fluctuating from 84° to 95°. Urine was drawn on leaving the bath, and at the expiration of 2, 4, 6, 9, 11, 21, 26 and 34 hours afterwards. All the portions, except the first and last, were very high coloured. On adding a solution of the carbonate of potash to the urine drawn before entering the bath, and to that drawn on leaving it, no perceptible change took place in the colour of either of them. Added to the other portions, it instantly changed all of them except the last, to a deep red colour; but that portion drawn four hours after leaving the bath, gave the highest colour. On the last portion it produced no visible change. All those portions that were reddened by the addition of potash, on standing 20 hours, deposited a copious sediment ; in those drawn at the expiration of 9 and 11 hours, it was

most copious, and of a pale red colour. While in the bath, his pulse was increased in force, but not much, if any, in frequency. No languor or head-ach succeeded.

EXPERIMENT IV.—In order to ascertain whether the colour of the urine, as last mentioned, depended on the presence of the colouring matter of the *rhubarb*, I made a watery infusion of *rhubarb*, of a similar colour to that of the urine drawn four hours after leaving the bath. On adding the potash, it instantly assumed the same deep red colour of the urine above mentioned.

EXPERIMENT V.—March 20th, at 15 minutes past 3, P. M. I immersed myself, my head and neck excepted, in a strong watery infusion of the *rad. curcuma*, and remained in it for two hours and a half. The temperature of the atmosphere was 45°, that of the bath fluctuating from 86° to 95° degrees. Urine was drawn on leaving the bath, and at the expiration of 2, 5, 12, 16, 21, 28 and 34 hours afterwards. All these portions, except the first and last, were much above the natural colour; and on adding a solution of *caustic potash*, they instantly assumed a reddish hue, though in a much less degree than in either of the preceding articles. Those drawn at the expiration of 2 and 5 hours gave the highest colour. That drawn 12 hours after leaving the bath, on standing 15 hours, deposited a copious sediment of a dusky brown colour. On adding the *caustic potash* to the urine drawn on leaving the bath, and at the expiration of 34 hours, no perceptible change took place in the colour of either of them, except their becoming paler by dilution.

EXPERIMENT VI.—In order to ascertain whether the colour of the urine could be imitated, and also to determine whether the *caustic potash* was a proper *test* to detect the presence of *curcuma*, I made a watery infusion of curcuma, similar in appearance to the highest coloured urine in experiment V. On adding the caustic potash to this, and also to the urine above mentioned, they both assumed precisely the same red colour. Wishing to ascertain whether the odour of certain volatile substances could be taken into the system in a manner similar to the colouring matter of the preceding articles, I made the following experiment with *garlic*, taking the state of the urine, and breath, as a proper criterion.

EXPERIMENT VII.—March 21st, at 4 P. M. I took one

end of a tube into my mouth, the other end of which was passed out of a window: pieces of adhesive plaster were then applied over my mouth and nose, so as to completely prevent the passage of air either to or from my lungs, except what passed through the tube. Mr. Jones then applied cataplasms of bruised garlic to my armpits, to the inside of my thighs and my ancles. At the expiration of one hour and a half, as they produced considerable pain, they were removed, and the parts (to which they had been applied) washed with warm soap-suds. I then left the room immediately, and a few minutes after, again washed the parts with soap and water, and changed my clothes; after which I took a walk of a mile. One hour and a quarter after the garlic was removed, my breath was sensibly tainted with the odour of garlic, so much so that two gentlemen who were in company with me at the time, mentioned it to me. Two hours after this, the smell of garlic was so strong in my breath, that it was not only very disagreeable to myself, but very perceptible to several persons with whom I was in company, and it continued so until late bed time. On rising from bed next morning, 14 hours after making the experiment, nothing of the odour of garlic could be perceived in my breath. The urine was frequently examined during the 30 hours succeeding the experiment. The portions drawn during the first two hours after removing the garlic, exhibited nothing peculiar either in colour or odour. At the expiration of five hours, it had a disagreeable pungent smell, and at the expiration of fourteen hours, it was still more so; but the precise smell of garlic could not be perceived in it. This disagreeable pungent smell continued for 26 hours, after which it became imperceptible.

Experiment VIII.—With a view to ascertain whether garlic, when taken into the stomach, communicates any odour to the urine, March 23d, Mr. Jones eat several cloves of garlic. His urine was frequently examined during the succeeding 36 hours. At the expiration of two hours after eating the garlic, nothing peculiar could be perceived in the odour of his urine; but at the expiration of 4, 6, 8, 12 and 24 hours, it had precisely the same disagreeable pungent odour of the urine mentioned in experiment VII. At the expiration of 36 hours, it had entirely disappeared.

The result of this experiment, I think, fully establishes two points in question—1st. That garlic, when taken into

the system, does communicate a peculiar odour to the urine; but it is one essentially different from that of the garlic.—2d. That the disagreeable pungent odour of certain portions of the urine mentioned in experiment VII. was produced by some portion of the garlic used in the experiment.

Having concluded the preceding experiments, I could not for a moment hesitate which side of the question to advocate; for the articles used, or at least some part of them, appear to have actually entered the system; and can any one for a moment suppose that it is possible for the three first articles (which it is known are not volatile) to have been taken in by the lungs? Through what other medium then could they pass, if not by that of the cuticle? As it respects the experiment with the garlic, considering the complete manner in which the lungs were excluded from any agency in the business, I think the result fully as conclusive as either of the preceding. The very result itself proves clearly, to my mind, that the odour was not taken into the system by inspiration; for if it had been, would not my breath have been more strongly impregnated with it at the conclusion of the experiment than at any subsequent period? And instead of increasing for some hours, would it not have gradually decreased?

If, then, not only the colouring matter (and probably something more) of certain articles, but the volatile odour of others, when applied to the surface of the human body, is conveyed into the system by means of *cutaneous absorption*, may we not reasonably suppose that mercury is conveyed into the system in a similar manner, when applied to the surface of the body in the form of *unguentum hydrargyri?* If this is not the case, how, I would ask, is a salivation produced by its use in this way? I have heard some of the advocates for non-cutaneous absorption say, in answer to this, "That the *mercury was volatilized*, and afterwards inhaled into the lungs; or, that it was induced by a sympathy existing between the glands of the mouth and those to which the mercury had been applied; or, probably in both ways." To the first I would beg leave to observe, that it requires a degree of heat far above that of the human body, to volatilize mercury, and therefore, until they bring some proof of its being the case, I have good reason for doubting it. But admitting it to be true, I would ask, how it happens that the attendants in the venereal wards of hospitals (who

would, in such a case, be constantly in a mercurial atmosphere) are not frequently salivated? Such instances have, perhaps, seldom, if ever, occurred.—To the 2d I would only observe, that of late it has become so fashionable to refer every thing to sympathy which cannot be readily accounted for some other way; that it would have been *heresy* in any one to doubt it, or to have overlooked it on the present occasion.

By some it has been said—"Whereas the matter which is the cause of most of the diseases (particularly those which are strictly febrile) which affect mankind, floats in the atmosphere, it is not *reasonable* to suppose that the surface of the *human body* is endowed with the power of absorbing; for if this be the case, it would be hardly possible for persons who expose themselves to the open air (particularly in sickly seasons) to escape disease." To me this appears a very futile objection; for if we were to determine the question by reasoning in this way, it would be much more plausible to deprive the lungs of the power of absorbing, (a power that no one at this day denies) and confine it exclusively to the skin; in which case we could in a great measure guard the system by means of proper clothing; whereas we are always under the necessity of breathing the circumambient air.

A few observations on a case of MANIA, *wherein the repeated affusion of cold water upon the head, conjoined, at the same time with topical applications of water, with vinegar and sal ammoniac, were productive of the most salutary effects. By* ROBERT RALSTON, *M. D. and Member of the Royal Medical Society of Edinburgh.*

THERE is no disease to which mankind is liable, more to be deplored, and more calculated in its nature to excite and awaken in the human heart acute feelings of sympathy, than the one which arises from the want of rationality. With a view, therefore, to contribute what is within the sphere of my ability, in order to alleviate the misery with which it is invariably attended, I purpose, at present, to lay before my readers the following case of mania, wherein the affusion of cold water, was productive of the happiest effects.

Mania, with its different modifications, is a disease which has employed the pens of several modern authors of distinguished ability.

The opinion which some of them have maintained, respecting its proximate, or primary cause is, that it originates from an encreased excitement of the brain, which is to be attributed to an inordinate action of its vascular system. This opinion seems to be consonant to fact and experience. The symptoms which manifest themselves during the progress of the disease; the causes, which generally give rise to it, and the morbid phenomena which are observable in the brain, on dissection, all tend, in the highest degree, to give it confirmation and support.

The deranged state of the intellectual system, which uniformly obtains in this disease, and which constitutes one of its most characteristic features, depends entirely at its commencement, on a plethoric state of the vascular system of the brain, accompanied more or less with an encreased and irregular action. Those persons, therefore, whose minds are constitutionally predisposed to enter into morbid, or, in other words, into false trains of thinking, are particularly liable to become affected with this disease, or with some of its modifications, whenever they are exposed to the agency of those causes, either external or internal, which have a tendency to cause a determination of blood to the head, and to excite its vessels to inordinate action.

It is necessary, however, to observe, that what has been said, respecting the opinion which ascribes the origin of this truly lamentable malady to a plethora, and morbid action of the vessels of the brain, is only applicable to its commencement. After it has continued for any length of time, the cause which originally gave rise to it, is either greatly diminished, or altogether removed. Yet, notwithstanding the absence of the cause upon which it depended, we observe, not unfrequently, the disease still to continue, although generally not so severe as at its commencement.

When this takes place, we are to ascribe its continuance either to some disorganization of the structure of the brain, produced in consequence of the previous morbid action, or to the inexplicable influence of habit, to which many diseases of the animal economy, but more especially those wherein the mind is particularly affected, are more or less subject.

As my principal object at present is to record a case of

mania, wherein the cold affusion was accompanied with the most salutary effects, I will now endeavour to state concisely the particulars attending it, and the mode of treatment which was therein employed.

The subject of the above case whom I attended, when in Scotland, in the year 1810, was a young man, aged 28, of a strong and vigorous constitution, and of the sanguine temperament. Previous to his attack, which happened in the month of June, he enjoyed a high degree of health, and had never laboured at any former period under any form of this disease.

Upon making inquiry of his parents whether or not he had been exposed to any of the causes which had a tendency to excite it, I was informed by them that the only cause which they knew, and to which they could ascribe it, was an exertion in repairing a road. This cause was sufficient to account for its appearance, by its direct tendency to produce an encreased determination of blood towards the head, and thereby to excite its vessels to inordinate action. I was likewise informed by a relation of his, that he had observed him a little incoherent, a few days previous to his attack; but knew not how to account for it. In this state he continued at work, for four or five days; after which he at last became affected with a violent paroxysm of mania.

At this time I was sent for, and the symptoms which then presented themselves, such as violent delirium, a red glistening eye, flushed face, and a wild expression of countenance, which is more easy to conceive than to describe; with a small degree of fever, and a slight acceleration of pulse, left not the smallest doubt, in my mind, respecting the nature of the disease, and the mode of treatment which ought to be instantly adopted.

In the treatment of the above case, two indications presented themselves; the first was to remove all exciting causes; the second, to lessen the determination of blood towards the head, and to diminish the plethora, and encreased action of the vessels of the brain.

The first indication was fulfilled by keeping the patient in a dark and quiet apartment, and excluding all persons from him, except those only who where appointed to watch over him.

With a view to fulfil the second indication, my first object was to abstract a sufficient quantity of blood from the arm of

the patient, in the erect posture, so as to produce *deliquium animi*. The arm was chosen, not as the most eligible part for the performance of this operation, but from necessity; the patient being so ungovernable at the time, that no attempt could be made to open the carotid artery, or jugular vein, which I certainly would have done, had it been at all practicable.

The quantity of blood which I abstracted at first from the arm, was about sixteen or eighteen ounces; a similar quantity was taken away twelve hours afterwards.

My next object was to produce a full evacuation from the bowels; to accomplish which, I gave large and repeated doses of the saline neutral salts, along with an infusion of senna; at the same time, I ordered the nitras potassæ to be mixed with barley-water, or toast and water, for his common drink.

After having employed the above, I ordered the head to be shaved, and cold applications of water with vinegar, or sal ammoniac, to be kept constantly applied to it.

These remedies, with the occasional assistance of the pediluvium, had a considerable tendency to diminish the violence of the disease.

With a view to produce a counter irritation, and thereby to divert the flow of blood still more from the head, I applied sinapisms to the soles of the feet, and small blisters to the inside of the thighs. I may here remark, that a blister, previous to their application to the lower extremities, was likewise applied to the head; but finding that the irritation arising from the blister was productive of rather a bad, than a beneficial effect, I was under the necessity to remove it.

Notwithstanding the employment of the above remedies, along with the occasional exhibition of camphor, the disease still continued, although considerably diminished in violence.

At this time, I resolved to try what effect might result from the affusion of cold water upon the head. The employment of which, I am extremely happy to say, was productive of the most salutary effects. The manner in which it was employed is as follows.

The head of the patient being shaved, and being properly supported by an assistant, I poured, from a considerable height, several large pitchers full of very cold water, direct-

ly upon it. The good effect which resulted from the application of this remedy was instantaneous. The patient, from being delirious and incoherent, became quiet and rational, and fell into a profound sleep. After the cold affusion, I applied always constantly to the head, either cloths dipped in a solution of water and vinegar, or sal ammoniac; and occasionally, sulphuric æther was employed, with a view to reduce its encreased temperature, by means of its evaporation.

After the patient had continued in this quiet state for some time, the delirium and incoherency gradually returned; but which were again removed by a repetition of the same remedy. By the employment, therefore, of the cold affusion, the intervals between the return of the paroxysms, were gradually protracted, until they at length terminated in complete recovery.

At the same time, whilst I employed the cold affusion, I was not inattentive to the state of the bowels, which I consider in this disease as an object of primary importance. In all affections of the head I may remark, that torpidity of the alimentary canal is more or less present. In the above case it prevailed in a very high degree; so much so, that it often required large and repeated doses of calomel with jalap, and other suitable cathartics, to produce evacuation. By means of the above, along with infusions of senna, and the occasional employment of laxative clysters, I kept up a moderate discharge, which greatly assisted to bring about a recovery.

The mode of treatment, which I employed in the above case, was evidently founded upon the opinion which has been entertained respecting the nature of this disease; an opinion which seems to be well established, resting on the sure basis of fact and experience.

It is likewise evident, that of all the remedies which were employed in the above case, that of the cold affusion was productive of the most evident good effects; for it was no sooner employed, than it made a powerful impression on the disease.

With respect to the modus operandi of this remedy, in the above case, it is my opinion, that the salutary effects which resulted from it are to be ascribed to its powerful tendency in reducing the increased temperature of the head; and in exciting a new train of sensations, which, for a time,

suspended that irregular and morbid action of the sensorium, upon which this disease depends.

This case, I hope, therefore, will be of service to shew the beneficial effects which may be expected to result from the affusion of cold water upon the head, in a disease which has no parallel in the catalogue of human sufferings.

N. B. The period from the commencement to the termination of the above disease, was little more than two months.

Preservation of human Bodies in a Cave, in Tennessee: in a letter from PLEASANT M. MILLER, *Esq. of Knoxville, dated May 1st,* 1811.

DEAR SIR,

YOU may remember, during the last winter, of my showing you at Washington an extract from the Nashville paper relative to a discovery of two bodies, in a perfect state of preservation, that were found in a copperas cave, and that on some account, we had some reason to doubt the truth of that statement. Since my return home, I made some inquiry, and I now know that the facts stated in that extract are true. Some parts of the bodies have been transported to some of the larger towns to the eastward of this. Another circumstance not detailed is, that the cane boxes, or coffins, in which they were preserved, were not long enough for the whole body; the legs were cut off and laid on their breasts; the bodies were as well preserved as a dried venison ham. The statement referred to Mr. Miller is this:—

"We are informed by a gentleman who was present when the following discovery was made, and on the fidelity of whose narrative we place the utmost reliance, that on the 2d day of September last, some persons were digging in a copperas cave (in the county of Warren, state of Tennessee,) situated on what is usually called the Cany Fork of Cumberland River, 10 miles below the falls. That at about six feet below the surface of the bottom of the cave, something like clothing was discovered, which, upon proper examination, was found to be the shrouding of some dead bodies. Upon further investigation, the bodies were found

to be two in number, a male and female, which, as he expressed it, they judged to have been buried in ancient times. They supposed the male to have been at the time of his decease about 25 years of age. He was enveloped in the following manner: first, with a fine linen shirt. His legs were drawn up, then five dressed deer skins were closely bound round his body. A twilled blanket, wrapped round them, and a cane mat sixty feet long, wrapped round the whole. His frame was entire except the bowels; his hair, of a fair complexion; his teeth, remarkably sound; his stature, above the common. The body of the female was found interred about three feet from that of the other. Its position of lying was similar to that of the male. The carcase was enveloped first with two undressed deer skins, under which, upon the face, was found a small cane mat. Then four dressed deer skins were wrapped round it, over which was folded a cane mat large enough to cover the whole. There were then five sheets, supposed to be made of nettle lint, wrought up curiously around each side with feathers of various kinds and colours. Two fans of feathers were found next, upon the breast. The body, with the whole of the before described wrapping, was found on what was believed to be a hair trunk or box, with a cane cover, which was wound up in two well-dressed deerskins of the largest kind; the whole girthed with two straps: the female is supposed to have been from 12 to 15 years of age: her hair short and black; the body entire; the eyes as full and prominent as if alive.

This cave is further described as follows:

About 30 miles from Carthage, on the Cany Fork of Cumberland River, a Mr. James Bryant has discovered a very extensive allum and copperas cave, capable of being wrought to an extent sufficient to supply the whole consumption of this state, and can be afforded at retail in Nashville, for half the price the imported copperas has heretofore sold for. This discovery, which was hinted at some time since in a public paper, is of the greatest importance. The cave that has been wrought lies in Warren county, within two miles of a boatable stream; there is also a fine road from it, and the copperas we have seen is not quite so fine as some of the imported, but appears to be much stronger, and looks very well. Mr. Bryant has experienced considerable difficulty in acquiring a proper knowledge of the cheapest

and most productive process by which to separate the copperas from the allum. Heretofore he has been obliged to destroy the allum to save the copperas. Any person who is acquainted with the method or the manner of making either, will confer a favour on the infant manufactures of our state, by communicating the same to the editor of the Clarion, that Mr. Bryant may save us the importation of copperas and allum. Mr. Bryant has only made about 200 weight of copperas, as yet; but a Mr. Coates, to whom he gave permission to try what he could make, has made about 300 weight. He is convinced that the different caves that he knows of in that neighbourhood will be sufficient, if properly worked, to supply every call for copperas and allum in this state.

REVIEW.

An Essay *on the causes of the variety of complexion and figure in the* Human Species ; *to which are added, animadversions on certain remarks made on the first edition of this essay, by* Mr. Charles White, *in a series of discourses delivered before the Literary and Philosophical Society of Manchester, in England. Also strictures on Lord* Kaims's *Discourse on the Original Diversity of Mankind, and an Appendix. By* Samuel Stanhope Smith, *D. D. LL. D. President of the college of New-Jersey, and Fellow of the American Philosophical Society. Second edition enlarged and improved.* New-Brunswick. Simpson & Co. 1810. 8vo. pp. 411.

DISCOVERIES in geography have shown that human beings exist in the remotest regions, and under the most dissimilar circumstances. On solitary and distant islands, as well as on undivided and extensive continents, individuals of the race have fixed their residence. In many instances, they have no knowledge whatever, of the time at which their fore-fathers came there. The manner of their arrival is equally unknown. Their genealogy can be traced but a few years back; and all behind is forgetfulness and ignorance. In other cases, a faint tradition of the origin of a family or the migration of a tribe is preserved. But that history which rests in the memory only, and is not preserved by writing, is vague and uncertain. And as the infancy of society is distinguished among other circumstances by its illiterate condition, the cradle of nations is covered with the mantle of obscurity.

Nor does the invention of letters always ensure perpetuity, to the events recorded. These symbols of articulate sounds must be inscribed or impressed on some durable substance. If figured on stone by sculpture, the material crumbles away, and the inscription disappears; or the monument may be invaded by a growth of vegetables, and mosses and lichens overspread the whole. The structure may be dilapidated, or when consisting of a single piece,

may fall and be covered with dust. Or again, the love of self may prompt some person to efface the original characters, and substitute new ones in their place. Hostility may lead a successful competitor, to destroy all the memorials of his rival or his enemy; while the mere wantonness, that delights in defacing literary emblems, contributes its full proportion to the accomplishment of this work. The statue erected by the inhabitants of New-York as an expression of their respect and gratitude to the elder William Pitt, for his services in procuring the repeal of the Stamp-Act, did not occupy its proud pedestal longer than ten years; and the mutilated trunk, separated from its explanatory tablet, has latterly served as a prop to a penthouse. The obelisk raised to the honour of Alexander Hamilton, upon the place at Hoboken, where he received the fatal shot, suffers such attacks from its rude visitants, as to threaten it with premature ruin. And the grave stone of Simon Boerum, a patriot who signed as a delegate in the continental Congress from New-York, the association entered into on the 20th October, 1774, by the united colonies, is already so obliterated, that it requires some effort to find the meaning of the epitaph, in the cemetery at Brooklyn.

Nor are likenesses, devices and mottos impressed upon metals any security against decay and oblivion. Already the brazen medallion struck in commemoration of Boscawen, the successful admiral, who took Cape Breton in 1758, is becoming a prey to the green rust. The medal voted by Congress to Horatio Gates, is rare and scarce; and had not a few of them been struck off in the mint of the United States, at the expense of one of their Vice Presidents, there would not perhaps have been a dozen in existence. And vainly have similar offerings been made by the government to the valour of Greene and Preble, when these testimonials of national approbation are as hard to be procured as the coins of Otho. The fate of those who seek immortality from bass-reliefs on brass and copper, and on silver and gold, is seriously to be deplored: since, if their everlasting fame is confided to the two former, it is in danger of perishing through the corrosion of acids; and if intrusted to the latter two, it is in greater jeopardy from the melting of the crucible.

The uncertainty of perpetuating the remembrance of events by sculpture and coining, was greatly increased by

the introduction of writing. In this art, significant marks were delineated on a proper ground, by a coloured fluid. Both were generally of a perishable nature. The ink might lose its blackness, while the paper or parchment was intire. The leaf or roll might be destroyed, before the tinging material had faded at all; or the body of the volume and the characters impressed upon it, might undergo destruction together. What accidents are opposed to eternity on earth! Too much moisture rots the book of records! Too much dryness crisps it! Too much heat burns it up! Rasures destroy the text! Interpolations mar it! And if none of these are successful, insects are ever ready to prey upon the historic page.

Paintings, by imitative resemblances, and by hieroglyphics, are of yet more dubious or short-lived meaning. Of the former, the original and copies are few, and liable to be spoiled, whether done in crayons, mosaic, in water or in oil. And hieroglyphics have the additional inconvenience, that although they survive the wreck of time, they may reach a posterity wholly unable to decypher them.

Even more laboured and extensive works than any of these, have puzzled all classes of interpreters. Witness the figured mounds of earth scattered over the interior country, from New-York to Georgia, of whose origin and author no mortal can speak with correctness. Relics of a departed or extinguished people, they demonstrate how uncertain are the structures we raise. Although the information derived from antiquity by these and other means constitutes the bulk of history, the amount of it is trifling and inconsiderable, when compared with the facts and transactions which are consigned to oblivion, and of which not a name or vestige remains.

But, although the infancy of society is thus involved in darkness and ignorance, men have from time to time appeared, who were curious to trace population to its source. In these researches, the benefit of that evidence which places things in a clear light was wanting; and the inquirers were reduced to the necessity of groping their way, by conjecture. Wild, indeed, and various were the opinions they propagated concerning the world and its inhabitants; their discrepancy proved their fallacy, and the philosopher was obliged to own the weakness of his speculations concern-

ing the eternity of matter, the spontaneous existence of man, and the fortuitous concourse of atoms.

In the midst of all this perplexity a people appeared, who derived their knowledge from a higher authority. Emerging from the lowest state of servitude in Egypt, they acquired distinction by their peculiarities and their enterprize. In virtue of promises and covenants entered into with their forefathers, the Hebrews considered themselves a chosen nation, under the immediate care of Heaven. Revelations of the Divine Will were frequently and familiarly delivered to their charge. Their God was their legislator; and from his communications to Moses, is supposed to have been derived that portion of early history, which it is impossible they could have received from monuments or records, or even from tradition. All this information, together with their sacred law, and their sojournings and proceedings until their settlement in the land of the exterminated Canaanites, was reduced to writing, and preserved with the greatest care.

In the Genesis of this author, a performance which among other things treats of the production of the world, it is stated, that in the beginning God created the heaven and the earth. He gave to them organization and furniture. On the earth he created man in his own image, of male and female sex. The man was formed out of the dust of the ground, and by means of the breath of life breathed into his nostrils, he became a living soul. The woman was made out of one of the ribs of the man, taken from his side by the Lord God while he lay in a deep sleep. The flesh of the opening whence the rib was taken being closed up, and the creature fashioned out of it brought unto the man, he pronounced her bone of his bone, and flesh of his flesh, and they became husband and wife, and dwelt in the garden of Eden. After their expulsion, sons and daughters were born unto them, who increased and multiplied until the days of Noah, when all flesh died that moved upon the earth, not excepting the human race, by a deluge, except Noah and his wife, and his sons, Shem, Ham and Japheth, with their wives, amounting to eight persons in the whole, who were preserved from the flood, in the ark, or vessel which they had built. After the waters had assuaged, God blessed Noah and his sons, and bade them be fruitful, and multiply and replenish the earth, and they went forth

from the ark, resting upon the mountains of Ararat, and of them was the whole earth overspread. For a considerable time, the families of their descendants were of one language and of one speech, until, as they journeyed from the east, they found a plain in the land of Shinar, on which they undertook to build the City and Tower of Babel. There, and on that occasion, the Lord confounded their tongues that they might not understand each other, and scattered them abroad upon the face of all the earth.

The reverend and learned author of the essay before us, is a firm believer in the verity of the Mosaic history. He has observed with sorrow, the attempts of several naturalists to undervalue or deny revealed religion. He thinks they are exceedingly mistaken in supposing that the spirit of piety is hostile to profound researches into nature. He maintains that genuine philosophy has ever been found the friend of true religion, and that they are only spurious pretenders to science who have wantonly arrayed themselves against the holy scriptures. He, therefore, does not presume to amuse his readers with a mere abstract or philosophical speculation, but, in establishing the unity of the human race, of their descent from the same ancestry, and their connexion by the same blood, to demonstrate the conformity of the doctrines contained in the Pentateuch, with the actual progress, variety and condition of man: and in the execution of this undertaking, he has selected a point of defence which was thought to be peculiarly vulnerable, and had been assailed accordingly with the greatest audacity and vehemence. It is dedicated to the Philosophical Society of Philadelphia, before which the substance of it had been delivered in the form of an oration, in February, 1787. Its object is to reconcile philosophy to religion, by referring all the individuals of the human race to the same original stock and parentage.

This, Dr. Smith undertakes in three ways: 1. By shewing how the species of man is diversified by CLIMATE, modifying the hue of every tribe from the ocean to the mountain-tops, and from the equator to the poles. 2. By delineating the STATE OF SOCIETY, and deducing therefrom other varieties which distinguish the great human family: and 3. By investigating the HABITS OF LIVING, and their effects in imparting peculiar characters to the features and figure.

Doubtless there is great weight in each of these arguments, and in the manner the author elucidates and enforces them. By climate, he means, if we do not mistake him, the general ratio of temperature which prevails over the whole globe, according to the distance from the equinoctial line, and to the gases which enter into the constitution of the atmosphere. Thus the colour of the skin is caused or modified by the rays of the sun, and by the redundancy of bile imparting darkness to the complexion by their separate and combined agency. The intermediate membrane, between the true and the scarf skin, is the immediate seat of colour, and approaches to black, according to the heat of the climate and the abundance of the bile. The gall by inspissation grows black, and its more fixed carbonic matter remaining in the rete mucosum while the phlogiston escapes, is the cause of it. The vapours from stagnant waters and putrefying substances act upon the surface, promote the hepatic secretion, and accelerate the sable work. And this is more rapidly effected by removals from high to low latitudes, and by the febrile distempers commonly excited thereby. Climate thus produces its most deteriorating effects in a savage state of society.

Doctor S. is of opinion that the darkness of complexion is further increased by the practice of painting the body, by the fumigations endured in ill-constructed houses, and in driving away insects, and in the hardships of their condition, tending generally to weaken and exhaust the principle of life.

As to the physiognomical part of his inquiry, Dr. S. is satisfied that the features of the human countenance are modified, and its whole expression in a great measure formed by the state of society in which men exist. Of this, he gives numerous examples, and most of them support his system with ingenuity. A good share of reading and information is displayed in examining the anomalous cases, which seem at first glance, to be formidable objections to his principle, and he discusses them in such manner as to confirm the maxim of the logicians: *exceptio probat regulam.*

After having thus sketched an outline of Dr. S.'s work, we quote from pages 242—245, his concluding observations.

"Having now concluded the investigation which I proposed into the causes of the principal varieties in com-

plexion and figure which distinguish the different nations of men from one another, it gives me pleasure to observe on this, as on many other subjects which have been attempted to be formed into objections against the sacred history, that the most extensive and accurate researches into the actual state, and the powers of nature, have ever served, more and more to confirm the facts vouched to us by the authority of holy writ. A just philosophy will always be found coincident with the true theology. But I must repeat here an observation which I made in the beginning of this essay, and which I trust I am now entitled to make with more confidence, that the denial of the unity of the human species tends to impair, if not entirely to destroy, the foundations of duty and morals, and, in a word, of the whole science of human nature. No general principles of conduct, or religion, or even of civil policy, could be derived from natures originally and essentially different from one another, and afterwards, in the perpetual changes of the world, infinitely mixed and compounded. The principles and rules which a philosopher might derive from the study of his own nature, could not be applied with certainty to regulate the conduct of other men, and other nations, who might be of totally different species; or sprung from a very dissimilar composition of species. The terms which one man would frame to express the ideas and emotions of his own mind, must convey to another a meaning as different as the organization of their respective natures. But when the whole human race is known to compose only one species, this confusion and uncertainty is removed, and the science of human nature, in all its relations, becomes susceptible of system. The principles of morals rest on sure and immutable foundations.—Its unity I have endeavoured to confirm by explaining the causes of its variety. Of these, the first I have shewn to be *climate*, by which is meant, not so much the latitude of a country from the equator, as the degree of heat or cold, which often depends on a great variety of other circumstances. The next is *the state of society*, which may augment or correct the influence of climate, and is itself a separate and independent cause of many conspicuous distinctions among mankind. These causes may be infinitely varied in degree; and their effects may likewise be diversified by various combinations. And, in the continual migrations of mankind, these effects may be still further

modified, by changes which have antecedently taken place in a prior climate, and a prior state of society. Even where all external circumstances seem to be the same, there may be causes of difference depending on many natural influences with which philosophy is not yet acquainted; as there are varieties among the children of the same family. Frequently we see, in the same country individuals resembling every nation on the globe. Such varieties prove, at least, that the human constitution is susceptible of all the modifications which exist among mankind, without having recourse, in order to account for them, to the unnecessary, and therefore unphilosophical hypothesis of there having existed from the beginning, different original species of men. It is not more astonishing in itself, or out of the order of nature, that nations sprung from the same stock, than that individuals should differ. In the one case we are assured of the fact from observation; in the other, we have reason to conclude, independently on the sacred authority of revelation, that from one pair have descended all the families of the earth."

This hypothesis we feel inclined to adopt, notwithstanding its difficulties, because those with which it is embarrassed are less formidable than the supposition that independent races were created; a supposition both gratuitous and unnecessary. The migrations to America, can now be explained. The Tartar tribes appear to have entered from the northwest, and to have overspread the regions south of the great lakes, quite to the Atlantic Ocean. The form, complexion and features of the natives afford the strongest evidence of this. (See our vol. 14, p. 176-7). The tradition among them is, that their forefathers came from the west. (Med. Rep. vol. 10, p. 36). Another part of the North-American population might have entered by the way of Iceland and Greenland, and by that route have reached the regions around Hudson's Bay, and penetrated to Labrador. The figure, form and manners of the Esquimaux, and their kindred tribes, are so much like those of the Laplanders, as to render such an opinion sufficiently probable. The South American colonies may have been families of Malays, that in the course of many generations passed to the eastward from island to island, across the Pacific Ocean. Or they may have been Phœnicians, or other wanderers, from Asia, Africa, or Europe, who were carried westward by the trade winds,

and touched the easternmost projection of Brazil, or some other landing place. Indeed, when in our own days such alterations are made in the bottom of the sea, by submarine fire, as are witnessed in the Azores, (see our vol. 12, p. 254-6, and vol. 15, p. 96-99) there can be no charge of visionary credulity in him who believes that the altantic island, mentioned by some of the ancient sages, had a physical existence, and has since disappeared in the waves; and that other islands, which might have formed more convenient stages of communication than now exist across both oceans, may have been wasted away by the irresistible impulse of water, and other agents.

Conceiving, therefore, that the assignment of two or more causes or creations for explaining a fact or accounting for an event, when one will answer, is unphilosophical, we take leave, before we quit the subject, to state concisely our own opinion of the causes of these differences which appear in the descendants of our first mother and sire. And we do this the more readily, because it appears to us that the argument has not been exhibited in its greatest force by the author, and because we feel reluctant to let a good cause suffer through the insufficiency of its advocate. We ascribe the varieties of the human constitution to four general principles.

1. Original Dissimilitude. There is no evidence that the individuals composing the family of men, did, in the beginning, all look alike. There probably were then as strong and marked varieties in their looks, stature, and constitution, even in the primitive family, tribe or stock, as there are now under similar circumstances. A strange sentiment has prevailed, that men originally resembled each other as much as pieces of money from the same dies, or as casts from the same mould.

2. Generative Influence. This is the most efficient of all the causes with which we are acquainted, in changing the complexion and outward form both of man and other animals. By an operation coetaneous with the conception or birth of the young animal, it may undergo an alteration of the skin, a modification of the hair, and disposition of the whole external surface, before it has experienced the direct effects of light, radiating heat, or atmospheric vapours. We have displayed this doctrine sufficiently at large, in our vol. 9, p. 69-70, to render a repetition of it

unnecessary in this place. It is cogent and conclusive on the several topics appertaining to it. We request our readers to examine it, and the authorities cited in it. Enough for our present purpose is the statement of the fact, established on broad induction, "that a man and woman may beget a "child of a different complexion from either of the parents, "and the complexion of the offspring may be perpetuated in "his or her descendants."

3. THE POWER OF IMITATION. Man may be emphatically called an imitative animal. By imitation he learns to speak and conform the muscles concerned in articulation; by imitation he acquires manners, and behaves like those among whom he lives; by imitation these are confirmed into habits; by imitation are formed his peculiarity and expression of features. Family resemblances, and national similitudes, derive their origin from this principle. The singular visage of the Jews, and other sectarian people, is found in this same plastic temper of the human clay. In short, the physiognomical part of the inquiry rests upon this solid basis. Grave observers have remarked that quakers, who associate and intermarry much with each other, thence acquire their distinguishing traits of character. Tailors, working for years in large numbers, on a shopboard, and facing each other as they sit, thence get the aspect and air of the trade. And the observation has been carried so far, as to fancy or find resemblances between the human face and the countenances of the animals with whom man chiefly associates: and thus, the front of the hound shall impart a somewhat to the face of the kennel-keeper that a skilful painter can catch; an ostler, shall borrow a shade of expression from his horses; and a shepherd, bear evidence in his countenance that his features have a tincture of conformity to those of the woolly breed. But we press this point no further.

4. The OPERATION OF LIGHT, HEAT, AND ATMOSPHERE, IN THAT COMBINATION CALLED CLIMATE. This, though it produces considerable effects, is, in our estimation, the least powerful of the whole, in working permanent changes in the human frame. But as Dr. S. has laid his greatest stress on this, and examined it minutely and in much detail, we must refer our readers to his laboured pages for further information.

Observations on the CLIMATE *in different parts of America, compared with the climate in corresponding parts of the other continent; to which are added, remarks on the different complexions of the human race, with some account of the* ABORIGINES *of* AMERICA. *Being an introductory discourse to the history of North Carolina. By* HUGH WILLIAMSON, *M. D. and LL. D. Member of the Holland Society of Sciences, of the Society of Arts and Sciences of Utrecht, of the American Philosophical Society, &c.* New-York. Swords. 8vo. 1811, pp. 199.

NORTH Carolina was promised an history some years ago. We announced the intended publication of it in our Hex. I. vol. 3, p. 66. Since that time we have been annually looking for it. At length, after waiting since the year 1800, we are gratified with the publication of this introductory volume.

At first, we were doubtful whether it would be proper to notice this book apart from the body of the work to which it belongs. But upon perusal, we are satisfied that it may as well be considered now, as at any future day. It contains a general and philosophical view of the subjects enumerated in the title page, and has about as much connexion with New-York and Virginia, as it has with the commonwealth to whose history it is prefixed. There is one reason, indeed, why it ought to be reviewed at this time; this is, the similarity of the matter in several respects, to that discussed in the foregoing article; therefore, there will be an advantage in displaying the contents of the composition before us, and of that which immediately preceded it, nearly together, that the sentiments of Dr. Williamson and Dr. Smith may be seen in succession.

The work is not methodically distributed into chapters and sections: but, that the reader may at once comprehend the scope and design of the author, we inform him without delay, what are a few of the points which attracted our attention in our progress through it.

He is a zealous and able supporter of the truth, in relation to the benignity of the physical constitution of America, and its favourable operation upon vegetable and animal life, against the mistaken and wrong-headed writers beyond the ocean.

He is a firm believer in the biblical history of man. He labours to show the conformity of the Mosaic writings to fact. The original creation of one man and one woman, and the descent of all human beings from them, to the flood, are strenuously maintained; as is also the destruction of the earth, and of all mankind by water, save those who were preserved in the ark; and the re-peopling of it by the family of Noah, after that dreadful catastrophe.

He thinks the winters are more temperate, cæteris paribus, on the western, than the eastern coast of North America; although in some parts of this continent they are colder than in corresponding latitudes of Europe. It appears to him probable, that the temperature of summer and winter may gradually become more pleasant in America, than in the same latitudes of the eastern continent.

He gives us the comfortable intelligence that the cold, blustering and drying winds from the west and northwest, are evidently decreasing; and that the more mild, moderate and moist currents from the east are become prevalent: occurrences that bespeak a great improvement in our climate.

He denies the assertion that quadrupeds degenerate, after having been transported to America.

He indignantly repels the insinuation that the human species loses vigour of body and power of mind in the western hemisphere.

He derives the aborigines of North America from Tartary and Japan, to the northwestern coast, and from Norway to the northeastern; and he follows the natives of South America from stage to stage, and from island to island, in their long migration across the Pacific Ocean, from India.

While he admits the great antiquity of the globe, he attributes a relatively modern origin to man. There is, and he believes ever will be in America, a nearer similitude in stature and countenance than the other continent affords. From that resemblance may proceed a more friendly intercourse, and more extensive and liberal communication of sentiment. "The soil of America, which seems to produce "animals of equal strength and firmness, but less ferocity of "disposition than are produced on the other continent, may "probably give existence to a race of men less prone to des-"troy one another, and more desirous to improve the under-"standing, and cultivate social virtues, (p. 180.)" This may serve for a summary.

We are next to examine a few of the positions, somewhat more at large.

On a more comfortable temperature during winter, to the west of the Alleghany and Apalachian mountains, we refer to the information we have heretofore given, concerning the prevalence of tepid winds from the gulf of Mexico, and of warm exhalations from Ontario, Erie, and the other unfrozen lakes, and to the several statements in the different volumes of our work, particularly to Swan's, Whiley's, Dunbar's, Drake's, Hildreth's, Dewitt's, Volney's, and Pike's respective journeys and expeditions throughout different regions of that country.

After a comparative survey of the temperature in both Americas, from Hudson's Bay to Terra del Fuego, and in the trans-Atlantic continent, in the different countries of the temperate zone, he rationally concludes, that a region miserably cold has been rendered comfortably warm, by cultivation alone; and that a similar change for the better may be expected in all countries, as the forests are cleared away, the marshes drained, and the surface of the earth exposed to light, heat, and wind.

The argument concerning the ease with which *black* substances conduct heat, and the difficulty that attends the transmission of it by *white* ones, is correctly stated. The application of the principle to the covering and clothing of the human body is just. It is properly observed, that black is hottest in the sunshine and coolest in the shade; and *vice versa*, that white is coolest in the solar rays, and warmest when they are obscured or withdrawn. We wish the learned and ingenious author had made the application to the skin of the negro and of the white man, with more minuteness and detail. But that so important a part of the discussion may not be slightly passed over, we shall briefly state our own opinion on the subject.

1. The inability of white men to endure exposure between the tropics, has long been known; and the acknowledged competency of black men to undergo fatigue beneath a vertical sun, has been the most plausible of the pretexts for introducing them as slaves into the colonies and plantations of the south.

2. Negroes are equally unable to contend against the rigour of our winters. They require more clothing, bedding, and culinary heat than the whites do. They give out sooner, during the prevalence of severe cold. They shiver quicker,

and are sooner benumbed. Nor are they more hardy on the sea than on the land. Negroes make good seamen, and they often engage in that capacity on board of our merchant ships. They are free men, and of course, are dressed as warm, and treated as kindly as the white sailors. And yet experience shows that they are less able to withstand the severity of the winter, in approaching the American coast, during January and February. Frosting and freezing of their toes and feet, are incomparably more frequent. In the New-York hospital, amputations for these accidents to the lower extremities, are often necessary to negroes, and seldom to white men, though engaged in the same services.

3. This ability of the white man to endure cold, may be resolved into the difficulty with which heat passes through the reticular membranes investing his true skin. If, therefore, a body be enwrapped in white, it will be likely to retain its temperature unchanged. The white covering will be equally unfavourable to the entrance of heat from without, and to the escape of heat from within. Hence we are enabled to understand wherefore the colour of snow is white, and why a covering of this hue overspreads the face of the earth in high latitudes, during winter. It is for the purpose of keeping the soil warm, and of preventing the escape into the atmosphere of more heat than could be conveniently spared. So ptarmigans, owls, foxes, hares, bears, and many other creatures are habited in white, during the siege of winter, that they may enjoy more warmth and comfort during the prevalence of darkness, and the absence of the sun.

Upon this principle we explain the old and approved practice among our farmers and husbandmen, of covering with a *white* cloth, in the latter part of autumn, or the commencement of winter, the apples that are threatened with freezing, on a sudden increase of cold. In this case, the warmth of the apples is preserved, notwithstanding the violence of the weather, by the interposition of the non-conducting *white* cloth. In like manner, hens'-eggs are guarded from congelation, during a considerable onset of frost, by their white shells, and may be secured from its refrigerating effect much longer, by being tied up and suspended in a cloth of the same colour. Instances are quoted of litters of pigs, consisting of black individuals and white individuals,

being exposed to the inclemency of the weather soon after they were farrowed; and of the latter bearing the cold much better than the former; the white ones living through the severe season, while the black ones perished.

We likewise discern, that a part of the censure ordinarily cast upon the fair sex, on account of the thinness of their fashionable dresses, is unmerited: the whiteness of the garments they wear, is a good protection to them. The goods that adorn their persons, are of the same colour with those which make the covering of their beds; and the whiteness of the sheets and blankets capacitates those articles to protect our bodies against the bitterness of winter, during the hours of sleep.

Thus the human skin, the earth, beasts, birds, apples, eggs, and the bodies of men and women, are best guarded by nature with white; and when art imitates nature, the same colour, by the slowness with which it permits heat to escape, is the best security for warmth and pleasure.

4. The ease with which negroes bear high heats, can be explained upon the facility with which their sable skins transmit the surplus of caloric, which if retained would incommode them. This hue is singularly adapted to the climate and situation in which the indigenous black man lives. In the equatorial regions there is no great disparity of days and nights throughout the year; and consequently, the darkness of night is equal to the splendour of day. Half the life of the negro must therefore be necessarily passed in the shade, or at least remote from the shining of the sun. During the moiety of his time, therefore, he may emit caloric freely, and be cool. When the sun rises, he is not always exposed to its radiance: he enjoys, for a portion of his time, the shelter of his hut or habitation. For another portion, he screens himself by the umbrage of trees. By parasols, and other artificial means, he mitigates further the intensity of light and heat; and the constitution of his skin is such, that during its direct exposure to the sun, it pours forth a copious sweat, which by evaporation, reduces its temperature lower than could be effected by any other complexion. On the manner in which the prismatic colour forms black, see M. R. vol. 5, p. 205-208. We hence discover why black clothes are, in shaded and dark situations, more cool or cold to the wearer, according to the season, than those of any other colour. Why the most pinching and injurious frosts

happen when the dark surface of the earth parts rapidly with its heat, without the intervention of a non-conducting layer of snow; and why the sooty utensils of the kitchen heat sooner at the fire, than those whose white and bright surfaces reflect and repel the igneous agent.

We have thus stated our opinion, and we have been induced to do so the more readily, because we do not fully comprehend that part of our author's theory at page 56, which ascribes to a white skin as it reflects light, a power of resistance, which heats the surface and checks the perspiration. A few sentences before, he had directed the employment of white garments under a warm sun, because white reflects light, and prevents too great an increase of heat upon the skin. Now, we acknowledge our incompetency to discern how light can heat a white skin and not heat a white garment; or that the action of light upon a white skin should check perspiration, and upon a black one, excite it freely, as he states toward the end of the same paragraph. And we are at a loss to comprehend how *the surface is heated by resistance*, when snow, ice, sand, chalk, and salt, are the reflecting bodies. To us it appears, that the contrary is the fact.—But in a performance of so much excellence, we ought not to be fastidious.

It does not so often happen that facts are presented to us of people passing from swarthy to fair, as from fair to swarthy. On this head, however, Dr. W. has stated some particulars, which we extract as a good specimen of his learning and ingenuity, from p. 59-67.

" If we trace the nations who inhabit the old continent through their various migrations, we shall find indisputable proofs that men change their colour with their climate; becoming darker or less dark, according as they move to a warmer or a colder climate. As men live with most ease in warm climates, they seldom migrate to those which are colder, therefore the examples of a whitening process are not very frequent; but there are some indisputable cases. The inhabitants of Denmark are generally fair, with blue eyes. The inhabitants of Bohemia, Poland, and Russia, are brown, with dark eyes, though some of them live in a higher latitude; but these nations are descended from the Medes, who lived formerly in the vicinity of Persia, a warm country, and they migrated long after the Goths and the

other Teutonic tribes, by whom Denmark was peopled. The Danes, by longer residence in their present country, have acquired a fine complexion, and their hair has lost its blackness.

"Instances present themselves every where of migrations to a warmer climate, and the consequent changes of colour and features have never been questioned. The fair and fleshy northern conquerors, who fixed their habitations in France, Spain, and Italy, have now acquired the darker complexion, and more slender form of the countries to which they came. The Moguls, who invaded Indostan, and settled there, have acquired the darker complexion, the figure, and features of the people they supplanted; they are nearly black. The Jews, who do not intermarry with other people, and whose food, in many articles, differs from that of other nations, have settled in every climate that is not very cold, and among nations of every colour, but they change their complexion in every case, and acquire some likeness in colour, form, and features to the people among whom they live. A colony of Portuguese, who settled at Mitamba, in Africa, are become black, with crisped hair; they are only distinguished by their language from the aborigines.* The descendants of French and English families, who have lived two or three generations in the West-Indies, are tending fast towards the complexion of the original inhabitants. Under all the benefits of care and cultivation, they are not of the same colour with the people from whom they sprang. The Chinese and Arabs possess a greater variety of climate than any other nation, and they have lived longer unmixed in the same country. Each of those nations is certainly descended from a particular stock, and yet we find, that by moving to the northward or the southward, the Chinese and Arabs change their colour. The shades or tints of the skin, in each nation, change by insensible grades, from brunets, nearly white, to a tawny colour nearly black, according to the climate. The blackening process in some of the Malacca or Philippine Islands, is very observable. These islands must have been settled from the continent by tawny or brown people. In the process of time they became black in that scorching climate, and their heads were covered with something like wool in-

* Account of the Trade of Great-Britain with Africa.

stead of hair. The Malays, not many centuries ago, invaded those islands, and extirpated the original inhabitants, or drove them to the mountains; hence it followed, that when the Europeans lately discovered these islands, they found near the coast, a tawny race of men, almost black, with long hair; but in the mountains they found a darker coloured race, with frizzled hair speaking a different language.

"We have seen instances of men with a tawny skin, from a warm climate, becoming fair by living in a higher latitude, and we are assured that whole nations have improved their complexion by a similar change of climate; but the cases are few, if any, in which we are credibly informed that a race of men perfectly black have become white again. This process, as I conceive, would require much longer time than is necessary to effect the opposite change. It is nevertheless apparent that such a process is within the powers of climate. The Hottentots must have come from a warm climate, from the torrid zone where the inhabitants are black; but the Hottentots are not black at present. By living in a higher latitude, near the Cape of Good Hope, they have changed their complexion. When rescued from grease and dirt, their skin is swarthy or brown. If it should be alleged that those rude unlettered people migrated from the tropical regions, before they had become perfectly black, an event that is not improbable, still the position is equally clear, that colour is the effect of climate, since other men who continued there are black.

"To the numerous cases that have been stated, in which men have changed their colour by a change of climate, I shall add a remarkable discovery lately made in the East-Indies.

"In the year 1806, Dr. Buchannan and Dr. Kerr, gentlemen of great learning and integrity, were appointed by the governors of Bengal and Madras, to examine the state of the Christian churches in Hindostan. The researches of those gentlemen were chiefly confined to that tract of country which lies between the western coast of the Peninsula and the Gauts, a ridge of mountains which runs parallel with the coast, and is seldom more than sixty or eighty miles from the sea, including the kingdoms of Cochin and Travancore. Those gentlemen report that the number of professed Christians on that coast exceeds 200,000. But

they found, in the same country, many synagogues of Jews. Some of those Israelites or Jews are white; others of them are black. The white Jews live near the coast. The black Jews live at some distance from the coast; near the mountains or among them. The white Jews are counted enemies to the black Jews. It is established by tradition and by the concurring evidence of authentic records, that the black Jews had settled in India long before the Christian era. It is also admitted that they settled there before the white Jews; and the station they occupy is a sufficient evidence of the fact. Those synagogues of black men, call themselves Beni Israel, or Israelites. They should not be called Jews, for that appellation belongs only to the tribe of Judah. The white Jews have no ancient historical records nor manuscripts among them. But the black Jews have copies of the law in their record chests. Some of those copies are very ancient, and written in a character that resembles the Palmyrene Hebrew. The reader will recollect that the ten tribes, who were not properly called Jews, were carried into captivity above seven hundred years before the Christian era. Reuben, Gad, and Manasseh, had been carried into slavery before the siege of Samaria. But the siege of that city lasted three years. It is not improbable that some of the Israelites, during that siege, made their escape to India, by way of the Red Sea. In whatever manner they may have travelled, it is fully established that many synagogues of the Hebrews, commonly called Jews, were established in India above two thousand years ago. The white Jews belong to a later colony. They probably wandered from a higher latitude, long after the destruction of Jerusalem; and being of the tribe of Judah, or Idumean proselytes, the ancient enmity subsists between them and the Israelites. Be this as it may, it is fully established, that by living in India, two thousand years or more, near the tenth degree of latitude, a detachment from a white nation are become black. If this shall not be taken for a proof that climate blackens the skin, all reasoning on the subject is useless.

" Upon the whole, we observe a regular systematical change in the colour, shape, and features of men, to the north and the south. From the climate of a fair skin, fine shape, and pleasing feature, going to the northward, the skin becomes of a blackish brown, the figure clumsy, and the features coarse. Going to the southward, in the same man-

ner, we alter the complexion, shape and features, until the skin becomes perfectly black, the shape in some countries less graceful, and the features coarse, the colour being altered, according to the soil, situation and climate, by the most regular and insensible deviations and shades.

" Those facts being considered ; it being also observed, that every change is most proper and best adapted to the climate, or that it is the natural effect of such climate, there can be no moral or physical proposition more certain than that all those people are descended from the same family."

The analogy between the aboriginal Peruvians and the ancient Persians is so apposite and convincing, that we lay it before our readers, p. 135.

" From this detail it is highly probable, that the Peruvians were a colony from the southern part of Asia ; but there are other facts by which it is rendered nearly certain, that they traced their descent from a branch of the Hindoos. The emperors of Peru were descended, as they alleged, from the sun ; and the incas, or royal family, would never contaminate their blood by intermarriages with other families. The worship of the sun originated among the Persians ; thence it was brought to India. From India it seems to have passed with the first colonists into Peru ; for the sun was the chief object of religious worship among the Peruvians. It was doubtless understood by some of those people, that their ancestors worshipped the sun ; and the man who obtained the chief rank among them, which he acquired by superior talents, would naturally desire to entail that rank on his family. For this purpose he adopted the most happy expedient. He traced his descent from that divinity whom their ancestors worshipped. He did more, he traced his descent from a long race of kings, by whom their ancestors had been governed ; whence it followed that he had a divine right to govern. Whoever his ancestors may have been, he ventured to assert, and his subjects believed that he was of the royal family ; a descendant of the sun. We are taught by the Vedas, that in every day of Brahma, which is four thousand three hundred and twenty millions of years, fourteen Menus, or divine persons, are vested with power to govern the earth in succession. The first Menu, who reigned in the present day of Brahma, was surnamed Swayambhuva, or the son of the Self-existent. He received the Vedas, the institutes of civil and religious duties, from the Brahma

himself. They are of great antiquity, above one thousand nine hundred and sixty millions of years: from him the present family of men are descended. This race is called the Latos creation; for it was preceded by many other creations. During the reign of the seventh Menu, the earth was drowned by a flood, and the whole race of men was destroyed, except the reigning prince and his wife, and seven pious men, who were saved with him in a large vessel. This Menu was surnamed Vaivaswata, or *child of the sun*. Ten children were born to him after the flood. Ila, one of his daughters, married Buddha, who was the son of the moon. From the oldest son of Vaivaswata, and the oldest son of Buddha, two royal families descended, who reigned in different parts of India. One family were called children of the sun, the other were children of the moon. Roma who reigned in Ayodha, was the last king of the children of the sun who reigned in the silver age. He is said to have promoted navigation and commerce, and he was more distinguished by his military achievements, than any other prince in that empire. His name is revered among the Hindoos, and, like Jupiter or Saturn of the Greeks and Romans, he is worshipped by them as a deity. Sita was the chaste, but unfortunate wife of Roma; for she had been forcibly carried off by a giant, and established her chastity by the fire ordeal. The chief festival among the Peruvians, was called Romasitoa. This appellation includes the names of Roma, the sun-born Hindoo prince, and Sita his wife. We can hardly derive a clearer proof that the Peruvians were a colony from India. The different Hindoo casts or classes, were not found in Peru, for the whole colony doubtless belonged to one class. The Chinese are said to have descended from the military class. It is probable that colonists, who traversed the ocean, were entirely of the mercantile tribe, the Bhyse class."

Did it not exceed our limits, we should insert with pleasure, Dr. W.'s speculation concerning the gradual augmentation of cold about the north pole and the surrounding arctic regions. For information on this point, we must therefore refer to his book, and to the memoir on the Ice-Islands in the Greenland Sea, and their influence on the climate of North America, quite to New-York, as published in our vol. 8, p. 443, and vol. 10, p. 225-235-410.

We were about to lay down our pen, when it struck us

that we ought to mention the ability with which the author replies to the hypothesis concerning the gradations in man, by C. White (p. 47-49), and to the pretensions of nations to a very remote antiquity, in the writings of the Chinese, Hindoos and Egyptians, (p. 155-166)—nor must we discontinue our task, until we have told that Dr. W.'s book contains an appendix of notes and explanations. The first is a register of the winds, abstracted from meteorological tables begun to be kept near Philadelphia, in 1748. It is intended to prove thereby that westerly winds do not prevail so much in the United States as they did sixty years ago; and that easterly winds are more frequently and extensively felt. The second is a recital of military operations, to prove the active courage and bravery of our native Indians. The third contains some curious information about the discovery of Vinland or Labrador, early in the eleventh century, by the Norwegian and Icelandic navigators, Biarm and Leif, who made settlements there. The fourth contains a description, with three drawings, of ancient fortifications or intrenchments, with which the internal regions of our country abound; and he concludes, that the people who constructed them have perished in consequence of intestine, domestic, and exterminating hostility, and by wars waged among each other, until not an individual has been left to tell the murderous tale.

On the subject of animal and vegetable productions, he believes the *turkey* to be a bird of American origin. (p. 38); that the Tartar adventurers left their neat *cattle* and *horses* (p. 103) behind, and therefore their American descendants progressed in society, from the hunting to the agricultural state, passing through the pastoral (p. 101), and he differs from the generality of writers, in supposing that the first colonists brought *maize* and *tobacco* with them, and of course, that those two plants are not strictly indigenous.—(ibid).

But we must reluctantly take our leave of a work abounding in piety and patriotism, and which will shortly, we hope, be followed by the history of which it is the forerunner.

A GUIDE FOR YOUNG SHEPHERDS; *or, facts and observations on the character and value of Merino Sheep; with rules and precepts for their management, and the treatment of their diseases, as well as of sheep in general. Collected from the latest and best writers on these subjects, and confirmed by the experience of the author and his friends. By* SAMUEL BARD, *M. D.* New-York. Collins & Co. 1811. 12mo. pp. 112.

ONE of the most important events in the economical history of our country is, the introduction of the Merino Sheep. In our vol. 13, p. 268-277, we gave the history of their importation, with a minuteness worthy of the subject. The United States are now stocked with animals enough of this peculiar race to give them increase to any desirable extent, within a few years. The desolating war waged in Spain and Portuga, has destroyed or scattered the flocks of merinos that formerly traversed the former kingdom for pasture, all over the provinces from Asturia to Andalusia. The overthrow of the Spanish monarchy, and the retreat of the court of Portugal to America, were accompanied with many forfeitures of estates and great confiscation of property. Flocks of the *Paular* and *Negretti* breeds of sheep, fell into the hands of new proprietors. Even the *Infantado* and *Escurial* races were sequestered and spread abroad. And although numbers, beyond account, have been slaughtered for the support of the armies, or have perished for want of care, a remnant still remained in the custody of men, who saved them from destruction.

There was a concurrence of events in the United States, highly favourable to the purchase and multiplication of these animals. By an early provision of our national government, horses, cattle, sheep, swine, and other useful beasts intended for breed, were admitted into the country, free from impost. This was calculated to encourage the citizens who went abroad, to enrich their country with the valuable animals they saw there. Afterwards, and some time before 1805, the great dispute began between the British cruizers and the American shippers, concerning the *direct* and *circuitous* trade. The American owners of coffee, and other productions of the French colonies, in the West-In-

dies, contended that the entry of such merchandize in a port of the United States, and paying or securing the duties upon it, was a *termination of the voyage;* and that such articles might afterwards be exported, under debenture for drawback, with the same privileges that appertain to the native productions of our land. On the other hand, it was contended that this revenue-operation did not break the continuity of the voyage, nor naturalize the articles which grow in foreign climes.

Our mercantile men insisted upon the principle " that the goods of a neutral, consisting of articles not contraband of war, in a neutral vessel, employed in a direct trade between neutral countries and ports of a belligerent country not invested or blockaded, are entitled to protection." The English courts of admiralty insisted, on the other side, that such a transaction at our custom-houses, did not break the unity of the shipment, nor render such an exotic as coffee, an indigenous plant of our soil: they charged the real or pretended owners of such property with glaring chicanery, and contended that the frauds committed under cover of neutral flags, amounted in reality to a *war in disguise.* In short, the British attempted to inforce their rule, " of restraining neutrals in times of war to their accustomed trade in seasons of peace."

The contention on these and other points was so earnest and serious, that the act of April 18th, 1806, was passed, prohibiting the importation of certain goods, wares and merchandize from any port or place situated in Great Britain or Ireland, or in any of the colonies or dependencies thereof. Among these forbidden articles were all manner of woollen cloths, whose invoice prices should exceed five shillings sterling the square yard, woollen hosiery of all kinds, hats and ready-made clothing. Though this act was to go into operation on the 15th November, 1806, yet Congress, by an act passed on the 19th December, that year, suspended the further operation of it until July 1, 1807; remitting at the same time the penalties, fines and forfeitures already incurred.

The intercourse between the European nations and our own, becoming more and more embroiled, the act laying an embargo on all ships and vessels in the ports and harbours of the United States was passed on the 27th Dec. 1807. This, and the several amendments, additions and supplements, hav-

ing excited great clamour in the nation, being violated in the most daring manner, and after all, discovered to be incapable of being executed or enforced, were repealed in February, 1809, after having been fourteen months in operation. In lieu of this internal regulation of trade, was passed the act to interdict commercial intercourse between the United States and Great-Britain and France, and their dependencies, and for other purposes. After much embarrassment and difficulty, this statute gave way to the act of May 1, 1810, concerning the commercial intercourse between the United States, and Great-Britain and France, and their dependencies, and for other purposes; in which statute it was declared that if either Great-Britain or France should, before the third day of March, 1811, so revoke or modify her decrees as that they shall cease to violate the neutral commerce of the United States, which fact the President of the United States shall declare by proclamation; and if the other nation should not, within three months thereafter, so revoke or modify her edicts in like manner, then the third, fourth, fifth, sixth, seventh, eighth, ninth, tenth and eighteenth sections of the former law, should be revived and put in operation against her.

France gave notice officially, that her edicts, violating neutral commerce, would be revoked on the first day of November, 1810, and on the 2d day of that month, the President proclaimed the event to the nation. High expectation was raised that Great-Britain would retract her injurious restrictions. But the first day of February arrived without any relaxation or overture of accommodation on her part. Whereupon the act of March 2, 1811, was passed, enforcing the provisions of the law of February, 1809, against Great-Britain, her colonies and dependencies, until the President should find himself authorized to declare by proclamation that their regulations and orders are so modified as not to injure our neutral commerce.

Under all these interruptions of our external commerce, and under other vexations, which it would require volumes to recount, the attention of our people has been turned, reluctantly indeed, but efficaciously, to domestic and internal improvement. Sheep have been saved from the dog, the wolf, and the butcher, for the value of their fleeces. Their breed has been improved by numerous importations from Lisbon, Cadiz, and other places. Five thousand full-blooded Me-

rinos are now living and propagating, in the United States. For a considerable time, the enormous prices of a thousand, and even fifteen hundred dollars, for an individual of the race, tempted commercial adventurers to procure them in Europe, and transport them to America, at all hazards: and these animals continued to be brought hither, until the prices gradually fell to twenty-five or thirty dollars a head. The different crosses of the Merinos with common sheep, in addition to their own precious fleeces, already make a most important addition both to the quantity and quality of the home-grown wool. Machines for carding it are erected in all parts of the country; and water now performs the labour formerly done by human hands.

Individual states, particularly New-York and Connecticut, enacted laws in favour of Merino sheep, and the fabrics prepared from their wool. With such local encouragement, the production of the material and the working of it into cloths and other useful fabrics, have advanced with a proportionate rapidity.

The arts of colouring and dyeing are much better understood than heretofore; and the methods of manufacturing these drugs, as well as of employing them afterwards, has made great progress among us. By a wise policy, drugs for dyeing are admitted without payment of duties.

Spinning is skilfully performed, both by the single wheel and by jennies; and weaving is carried on, as well by the spring-shuttle, as by the cast of the hand.

Fulling mills are well constructed and attended. And in shearing the cloth, the improvements in the machinery surpass every thing that the world has seen. Instruments for cutting away the nap, are moved by water; the stroke of these shears is steady and uniform; they make an even surface; they cut no holes; they leave no piles standing, and are so constructed, that on getting to the end of the piece, they cease to act as soon as there ceases to be any cloth to act upon.

The quality of the cloths manufactured from domestic wool, surpasses all belief. The returns to Congress, with the enumeration by the census, excite the most lively and pleasing surprise. We are almost independent of all foreign nations for the article of woollen goods. Broad cloths, and coatings, and kerseymeres, and blankets, and carpets, and flannels are already produced in fine and plentiful condi-

tion ; and what is more, our people take a pride in arraying themselves in homespun.

The substitution of cotton for both linen and woollen goods of trans-Atlantic manufacture, is of itself a memorable event in our history. Where the linens of Ireland and Germany were formerly employed, cottons of domestic growth, twisting and weaving, are now employed, or home-made linens introduced into use, for towels, table-cloths, shirts, sheets and numberless other purposes. And of the heavier and thicker cotton fabrics, the jeans, fustians, thicksets, velvets and corduroys are found to answer perfectly the purposes of clothing for eight or nine months of the year, and many articles for certain classes of persons, the whole circuit of the seasons. Experience also has proved, that the blankets, rugs and napped fabrics of cotton, are excellent articles of bedding, and secure to the sleeper a most comfortable heat. Already the United States are in a condition to export cotton yarn, and shortly cotton cloths will be offered to external markets.

They have made remarkable progress in learning the wholesome lesson, that for all the necessary articles of food, of clothing, of fuel, and of defence, every nation ought to derive them from her own internal resources, and be wholly independent of all exterior commerce for each and every of them. The association of the arts ministering to these wants, is too intimately connected with their existence, as well as their happiness, ever to be forgotten, or even disregarded.

It ought to be mentioned too, that unmanufactured wool is admitted free, by a congressional regulation of long standing. This was intended to favour the domestic manufacture. But the existing state of the country in relation to this material is such, that we shall soon have full supply for our own clothing and comfort; and then there will be soon a surplus for exportation. Instead, therefore, of importing woollen goods, we shall, after furnishing ourselves with all we want from our own sheep, have abundance of the raw article to spare.

In the midst of all this successful enterprize, comes forth the experienced author of the present treatise as a guide to the shepherds. We hail him with the pipe of Pan, and the welcome of Sylvanus. We greet him in pastoral strains, as worthy of being sung by a Mantuan or a Syracusan muse;

and should any one of our countrymen feel poetic inspiration enough, like DYER, to write in praise of the fleece, we recommend to his special celebration the services rendered to it by Bard.

But we must return to our purpose, which was to review the book before us. On this, however, we shall not be prolix. Its reduced size accommodates it to general perusal. Its moderate price puts it within the reach of all the proprietors of sheep and of soil. Its sententious style and practical matter makes an abridgment of it a rather difficult task. We are, therefore, induced to recommend a perusal of it entire.

But, that we may not seem to slight this choice little performance, we may observe, that the chief materials it contains, are comprehended in four chapters. In the first of these, the characters and qualities of the Merino-race are considered. Their superior excellence and profit are proved by various cogent arguments.

The second treats of the maintenance and support of sheep. Herein are remarks on high and low feeding, and on summer and winter management. He recommends plentiful food, and shows by an engraving, how barns for provender, hovels for shelter, and troughs for feeding, ought to be constructed.

The author gives ample directions about breeding, in the third chapter: the age and fitness of rams, the number and size of the ewes, and management and rearing of the lambs are discussed. To which are added practical directions on docking, washing, shearing, and marking; with figures of an easy and certain way of numbering sheep, by cutting nicks and notches in their ears.

The diseases of sheep are the subject of the fourth chapter. Herein are contained practical instructions about wounds, abscesses, ulcers, and fractures; and concerning looseness, bloody-lax, foot-rot, staggers, scab, and several other distempers. And he concludes his work, with an account of the sheep-pox, or variolæ ovinæ, called also the claveau. The history of this terrible malady, (p. 105), affords a good specimen of the author's skill in his two-fold capacity of physician and farmer; and with this quotation we conclude our remarks.

"Of this fatal disease I have had but too much experience. It was brought to me last fall in a small flock of

twenty-five sheep, purchased by Messrs. Murray and Sons, from Mr. Havens; and about the same time was brought to my neighbour, Mr. Broom, in a number of very sickly sheep, sent to him by Mr. Vigars, of New-York. Of those sent to me, three died before I received them; and soon after several more, before I suspected any other complaint than the scab, and other consequences of confinement during their voyage from Spain. At length I discovered a black ragged scab on the cheek of one; and on examining it carefully, found beneath a foul stinking ulcer, which had eaten partly through the cheek, and was spreading in every direction. On examining the rest of the flock, the same complaint, but in a less degree, was discovered on five or six more. A corrosive wash, composed of the vitriolic acid and water, and another of a solution of Roman vitriol, well rubbed into the very bottom of the ulcer, so as completely to destroy its surface, soon sweetened the discharge, and gave the ulcer a healthy appearance: by this several were cured, but notwithstanding all the care I could bestow on them, several also died. While this was doing, and while at the same time I was rubbing one of the sheep with Mr. Daubenton's remedy, *(spirits of turpentine and grease)* to cure it of the scab, I discovered on the back of one, several tumours, about the size of a sixpence, from which the wool had fallen off, and which on being pressed, discharged from a very small opening, a whitish matter, so thick as to retain the form of a small worm. The same tumours were after this discovered in several other sheep; and it was these which first excited a suspicion of the nature of the disease. Whilst reading Laysterie's account of the introduction of fine-woolled sheep into Europe, I remarked his description of the mode of procuring matter for inoculating for claveau; by *pressing the tumour with the finger, and forcing out the matter, in order to take it on the point of a lancet.* I now visited Mr. Broom's flock, where I found the disease in a more recent state; and comparing what I there saw with the appearances in my own flock, and with a most full and accurate description of the disease, published in a treatise on cattle, by Mr. John Mills, London, 1786: no farther doubt remained. We had introduced into our flocks the *claveau, sheep-pox*, a disease in many respects resembling, and equally infectious with the small-pox, in the human species. The first idea was to stop the

infection, by carefully separating the sick from the healthy sheep; which we found, as I believe it always will be found, a vain attempt, as far as it regards those sheep with which the infected have run, even for a short time; but which on the other hand, has proved a perfect and complete protection for such flocks as have not actually run together; even where the distance dividing such flocks was so small a space as a narrow lane of two rods wide. I have kept all this winter and spring a flock of half-blood, which have had no greater separation than such a lane; and whilst every sheep and lamb in my sick flock has had the disease, not one of either in the other has taken it; nor has the disease appeared in any of my neighbours' flock, nor in those of Mr. Broom's neighbours.

"The sheep pox commences by a heavy, watery, and slightly inflamed eye, some swelling of the lips, and a discharge from the nose, very soon succeeded by an eruption round the mouth on the edges of the lips, and particularly at the corners of the mouth. In some instances of the mildest species of the disease, these have been all the symptoms which have appeared. The eruption has dried into small black scabs, which have fallen off in eight or ten days, and left the sheep quite well. In the next degree of the disease, on examining the sheep, an eruption of various size and shape is found on the inside and naked parts of the thighs and belly; some of the pustules are small and round, others broad and flat; and some are likewise discovered under the wool on different parts of the body. These pustules grow yellow on the tops, and discharge a small quantity of matter, which dries into a blackish scab. Still this is to be considered as the mild and distinct species of the disease, and is attended with no great danger. The confluent and malignant species of the disease commences with a more violent inflammation of the eyes, a more manifest and considerable swelling of the lips, and a greater and more purulent discharge from the nose. The eruptions on the naked parts of the body are very numerous, broad and flat, of a reddish brown, or purple colour; and are likewise discovered under the wool, on every part of the body. The animal appears very sick, dull, and stupid; and refuses food, partly from loss of appetite, but more evidently from the soreness of its mouth; on every part of which, tongue, gums, and on the inside of the lips, the eruption is disco-

vered. Of these malignant cases some have died in twenty-four and thirty-six hours: others have struggled through eight or ten days, and a few, but very few have recovered. Between these grades of mild and malignant claveau, the variety has been almost as great as the number of animals seized. But neither in the confluent, or mild species, was any high degree of fever manifested by hot feet, ears, or mouth; which, in general, were rather below their natural degree of heat; and in some of the worst cases, were actually cold. Nor did the breathing often become quick and laborious until very near the fatal termination of the disease.

"Of the lambs, some were seized within three days after birth, so that I believe they must have brought the infection with them: others were not seized until they were eight, ten, or fourteen days old; and I thought evidently took the disease from the older and more early infected lambs.

"The little animals, in general, appeared to droop for a day or two; and then the first symptom, as in the older sheep, was an inflammation of the eye-lids and lips. This was soon followed by the eruption, which appeared very thick and florid on the inside of the thighs, and other naked parts, and could be felt on every part of the body. From day to day the number of eruptions appeared to increase, and to collect in large clusters, particularly about the neck, throat and jaws; by which, although the lambs retained an appetite for the teat, they were at length prevented from sucking. In a few of the old sheep, although the eruption was very numerous, the maturation of the pock was perfect, and in general, such recovered. But more frequently it was very imperfect in the old sheep; and in the young lambs, I saw none that maturated at all, where the eruption was general over the body; and all such died. But where the eruption was chiefly confined to the mouth and pudenda, a kindly maturation took place and they recovered. Upon the whole, this disease proved fatal to more than one third, nearly half of the old sheep; and to three fourths of the lambs which were attacked.

"The relics of this disease, like those of the small pox, are various and terrible. I have already mentioned the putrid and corroding ulcers about the mouth. Some had imposthumations, especially about the head, which on being

opened, discharged a greenish and offensive matter; but the eyes most frequently suffered; the ball of the eye itself imposthumating and bursting, and this symptom attended and followed some of the milder cases: in one, a fine full-blooded ram, no other symptom was discovered.

" *Treatment.* It will readily be conceived that in a disease of this nature, no more than in the small pox in the human species, nothing like cure can be attempted with success; if by cure is meant to put a stop to the progress of the disease. Like all diseases of this kind, it must, and will run through its stages: and all that can be done is by a well-regulated diet, and by attention to the state of the bowels, and attempting to mitigate any violent and untoward symptom, to conduct the animal safely through it. At first, as I have said in the hope of stopping the spread of the disease, every sheep that was attacked was immediately and carefully separated from the flock; but soon finding this a vain attempt, it was abandoned; and those only which were more seriously attacked were taken to my hospital, that they might be more particularly attended to. The milder cases were left in the flock to common treatment and common food; except, that instead of corn, the whole flock had bran and water with hay. Those that were taken to the hospital had chiefly roots and bran; and those whose mouths were so sore that they could not eat hay, or even roots, were supported on gruel, given three or four times in a day by means of a bottle. The only medicine given, was brimstone and molasses, yeast and molasses, and in some cases, a little nitre. Sore mouths were constantly cleansed with vinegar and water; and when they began to ulcerate, with one of the caustic solutions mentioned above. In a few of the worst cases, mercurial ointment was rubbed freely under the axillæ and on the thighs. To two or three I gave calomel freely, to try how far mercurials might mitigate the symptoms. Under such treatment, most of the mild, and a very few of the more severe cases recovered: and one very malignant and confluent case in my neighbour Mr. Broom's flock, recovered under the free use of mercury.

" *Inoculation* for this disease is recommended in many parts of Europe; and Mr. Laysterie assures us, with efficacy and success. As soon, therefore, as I was assured of the disease, I made the attempt; but I cannot say with any

considerable success. In the first place, I found it difficult to procure matter, and when I had succeeded so far, I again found it very difficult to communicate the disease with any certainty, although I performed the operation with great care, and in every mode I could think of: with a thread, with the scab, and with fresh fluid matter: and where the sheep or lamb took the disease, many died. But I must confess, I was by no means certain they had not taken the disease before inoculation, in the natural way. A very few evidently took the disease from the inoculation, and went through it with safety. I vaccinated seven, but I was not sure that one took the cow pock. Yet the analogy between the claveau in sheep, and the small pox in man is so great, that if the disease should again appear, I would recommend, and would myself again attempt inoculation."

A brief Topographical and Statistical Manual of the State of New-York, &c. &c. Albany. Frary. 1811. 8vo. pp. 36.

COMPENDIOUS works of this kind are both valuable and interesting. To the former of these qualities they are entitled, by virtue of the great amount of information which they methodise and compress within moderate limits; and their pretensions to the latter are founded upon the ready answer they afford to queries, and the prompt solution to doubts, concerning the various matters on which they treat.

The compiler of the small tract now before us, if we mistake not, is Mr. Sterling Goodenow. In it he treats in a concise manner of the situation and boundaries of the several counties in the commonwealth; the number and names of the cities and towns contained within them respectively. The hills, mountains, lakes, rivers, and generally, the diversified forms of land and water; the villages, and other remarkable places within the boundaries of each town, and their distances from Albany, the seat of the state government, by the accustomed route.

To make his work the more useful, Mr. G. has designated in it the principal towns and situations where the courts of law are held in each county; the several places at

which post-offices are kept; an enumeration of villages incorporated with special powers, by acts of the legislature; and a variety of other particulars. We are led to consider it the forerunner of Mr. Spafford's Gazetteer.

It is well known that New-York consists of forty-five counties. These are Albany, Alleghany, Broome, Columbia, Clinton, Cayuga, Courtlandt, Chenango, Chataughque, Cattaraugus, Dutchess, Delaware, Essex, Franklin, Greene, Genesee, Herkimer, Jefferson, Kings, Lewis, Montgomery, Madison, New-York, Niagara, Otsego, Onondaga, Ontario, Oneida, Orange, Queens, Rockland, Richmond, Rensselaer, Suffolk, Sullivan, Schenectady, Saratoga, Schoharie, Saint-Lawrence, Seneca, Steuben, Tioga, Ulster, Westchester and Washington—45. On each of these the author has constructed a table, defining its position and limits, its population, remarkable places, villages, post-offices, court-houses, and distance in miles, from Albany. All these pieces of information are brought before the eye at one view; and by examining in succession the forty-five tables, the reader becomes acquainted with the present condition of each, in all these respects.

After this exposition of the matters contained in this publication, we might with propriety close our remarks. But there are some observations which we copy, on account of the explanation they afford of Mr. G.'s plan, of the summary they contain of the manufactures established, and of the spirit of patriotism which they breathe.

"1. The division into *Counties* was not less natural than convenient. The people are represented by counties in the lower branch of the legislature, and not by towns as in New-England; most of the public concerns, which do not come within the *general* and immediate province of the legislature, are conducted by the counties as separate communities; each county has a separate civil commission and list of public officers—and therefore each county may (in a comparative sense) be considered as an independent and distinct department. Accordingly this is the division and distinction most commonly used in speaking of the different parts of the state.

"2. The *first* sub-division is into *towns*, including the *cities*, which, for most general purposes, are considered in the same class: These towns are from 2 or 3 to 6, 8, 10, or 15 miles square, or more, as the circumstances and settle-

ment of their territory may render most proper; and they frequently embrace villages and other places which have in common and constant use, different and distinct names. And the number of such places is increasing. Some spot favourable for manufactures, or for the transaction of mercantile or other business, suddenly becomes populous; and if remote from an earlier settled or more noted part of the same town, requires a separate name as much as if an imaginary line sundered it from the *territory* of the town. And if it did *not require* or *deserve* a distinct name, still so long as it *has* one in common and general use, and is by *such* name *distinguished* from other places, it is as *necessary* to know *what* and *where* such place is, as if it were formally named by law. And therefore where a town of large extent has in it a village of the *same name with itself*, as Johnstown, it is sometimes *essential* (and always safest) to *designate* the *village* of the same name, if *that* be the place intended; as otherwise the person or thing might be supposed to be in the village of Caughnawaga, or in some farming or other part of the town, six or eight miles distant from either.

"3. Hence the *second* sub-division into "villages, &c." which in one column includes all the villages and other places and posts, which have acquired a *distinct name*. All these places are set directly against the town in which they are situated; and I have *distinguished* all those places which have from 15 to 20 houses compactly situated, as *villages*, further distinguishing such of those villages as are *incorporated* as bodies politic. In making these distinctions I may, and most probably have, omitted to designate some places in the newer counties as *villages* which are considerable enough to deserve that name; but these omissions can be but few. And of other places still fewer, I believe, that could deserve to be mentioned, are omitted. On the other hand, there may be a few names put down, which some may perhaps think should have been discarded. But all places that may be named, or spoken of, or referred to, in the publications of the day, or in public proceedings, should be located in their proper town or corporation; more especially, if in or near cities and towns of great notoriety and resort. On this account I have put down the islands and other places in and near New-York, Long-Island, the Highlands, Niagara Falls, &c. And history has rendered it

important to designate the local situation of fortresses and other military posts which have at any time been established in the state.

" On the whole I cannot but have some hope that this Manual will answer most of the purposes proposed. And as one *collateral* object was to exhibit the increasing strength and importance of the state more fully than it has heretofore been done in so brief a sketch, the following facts are added.

" In 1731, this state contained 10 counties, and only 50,291 souls—in 1771, same counties and 163,338 souls—in 1786, (25 years ago) 12 counties and 238,896 souls—1791, sixteen counties and 340,120 souls—and in 1800, thirty counties, 305 towns, (including three cities) and 586,000 inhabitants. Now (1811) the state contains, about 300 villages, of from 15 to 20, but generally from 30 or 40, to 600 houses; 452 towns (including four cities;) 45 counties; and in (1810) 960,000 inhabitants; giving an increase of 15 counties, 147 towns, and 374,000 people in the last ten years!! And the militia of the state regularly enrolled amounted to 102,068 in 1809.

" In *Manufactures* the late census has furnished data, for the following statement.

" Looms 33,068; yds. cloth (all kinds) 9,099,703—value $ 5,002,891 82. Tan Works, 867; val. of leather $ 1,299,542 16. Distilleries, 591; val. $ 1,685,794 40. Breweries, 42; val. $ 340,765 68. Fulling Mills, 427; *enhanced*, val. of cloth, $ 679,126 87. Paper Mills, 28; val. $ 233,268. Hat Factories, 124; val. 249,035. Glass Works, 6; val. (besides bottles, &c.) $ 716,800. Powder Mills, 2; val. $ 10,400. Rope Walks, 18; val. $ 538,000. Sugar Houses, 10; val. $ 420,706. Oil Mills, 28; val. $ 49,283 75. Blast Furnaces, 11; val. $ 205,300. Air do. 10; val. $ 156,720. Cut Nail Factories, 44; val. $ 276,932 80. Forges, 48; val. $ 185,240. Trip Hammers, 49; val. (return of work from two of them only) $ 1,600. Rolling and Slitting Mills, 1; val. $ 33,120. *Total value*—$ 12,085,525 62. Also, 413 Carding Machines—value included in cloth above; and 26 Cotton Factories, not included above, the cloth there mentioned being the manufacture of families only. The above returns (except for Ontario, Columbia, and Washington counties) are moreover believed to be short of the real amount—no

tow cloth was returned, except for two counties—instead of one there are ten or twelve Rolling and Slitting mills in the state—the Nail, Hat, Paper, and Rope factories, Furnaces, &c. much exceed the number returned. All the Woollen factories were omitted. The single county of Rensselaer will this year manufacture of the above articles the value of $ 600,000, though returned last year at $ 458,000. And many new factories, in Oneida especially, and in the western country generally, are just going into operation. So that it may be safely affirmed that our present *annual* value of the above named manufactures exceeds $ 16,000,000!

"There are now made annually 525,000 bushels of *Salt*—viz. in Onondaga, 453,840 (though in 1800 only 42,754); Cayuga, 54,000; Genesee, 1,400; Seneca (at least) 25,000; and Ontario, about 8,760—total value at the works, $ 147,000. In Cayuga, 2,240 skeins of *Silk*.—To all which may be added $ 60,000; the value of articles *annually* made by convicts in the State Prison.

"I have not sufficient data to calculate the quantity of the Ashes, Maple Sugar, Flour, &c. made; or the Grain, Cattle, Sheep, Beef, Pork, &c. raised annually, so as to make a valuation of our products or lands. But as the *sheep* returned for Dutchess were 83,855—Albany, 34,342—Cayuga, 49,872—Onondaga, 44,893—and Jefferson, 20,000—we may conclude, judging from the population, (exclusive of New-York Co.) that the whole state contains 1,280,000. Dutchess contains 14,341 *horses* and 51,650 *neat cattle*, which in like manner (N. Y. omitted) gives 247,000 of the former, and 886,000 of the latter; but probably 300,000 horses, and 1,000,000 neat cattle would be nearer the true amount in the whole state.

"The provisions made for *Roads and Bridges*, besides the numerous roads and bridges authorized to be laid out, made and built, at the risk of individuals or expense of the counties, the state, or the lands benefitted thereby—are 36 Bridge Companies with $ 509,000 stock, and 135 Turnpike Companies with $ 7,558,000 stock, extending their roads over a length of 4,500 miles, about one third of which is *completed.*

"The Capital Stock of the several incorporated Banks is $ 11,690,000. The *Fund* set apart by the state for the benefit of COMMON SCHOOLS now amounts to $ 483,326 29—the last year's revenue of which was $ 36,427 64—be-

sides which 314,770 acres of unsold land still belong to this Fund.

" The *Revenue* and *Expenditures* of the state are, in the abstract, as follows:—Lands, about 1,000,000 acres unsold; and State Funds $491,803 25 (in 1800 about $2,900,000); the annual revenue of which is now $278,489 96—besides which the receipts at the treasury from various other sources were, for the year 1810, $626,042 88 (for 1791, $127,648; for 1800, $192,028 71)—and during same time were paid out $606,328 22 (in 1791, $143,417 64; and in 1800, $261,765 03.) Estimated expenses for 1811, $268,366 22. Debts which the state owes, besides some small unliquidated demands, $880,000 (in 1800, $346,234 98.) Which (exclusive of the School Fund and Land, and of the 1,000,000 acres public lands above named) gives about $30,000, *annual excess* of revenue over expenditures, and a *permanent* fund *exceeding* the public debt $3,311,803 25.

" There are established in the state, two Colleges and upwards of forty Academies: also 364 Post Offices, being more than 1-7th of the whole (2,440) in the United States; and 60 different Newspapers, and (in all) about 90 printing establishments. The shipping owned in this state, in 1809, was 251,525 tons, (besides that on the three lakes,) being 1-5th of the whole owned in the United States. Amount of exports in 1807, $25,357,963; and Revenue on Imports, &c. more than 1-4th of the whole paid in the United States (from 1-4th to 1-3d of which two last items is, however, derived from the trade of other states.)

" In addition to the goodness of our soil and the excellence of our timber, we have plenty of Iron-ore, Slate, Plaister of Paris, and inexhaustible Salt Springs, the most valuable in the world. There have also been found Coal, Copper, Lead, Sulphur, Zinc, Marble, Ising-Glass, and some Silver. Our territory (containing 55,000 square miles, of which 4 or 5,000 are water,) stretches from the Atlantic the whole length of New-England, and spreads along the St. Lawrence and three great navigable lakes. Embracing the head-waters of the Ohio, and two other large rivers which pass southerly through other states—the whole course of the best river in the United States, and perhaps in the world—together with twenty other rivers navigable by boats and rafts; this state affords the best passage in the United States, both by land and water, from tide-waters

to the extensive navigable lakes to the west. There is not a mountain or any great unavoidable hill to pass between Albany and Lake Erie. It is the only state, too, (except at the narrow and N E. extremity) which extends across the *whole width* of the United States' territory; and the only spot on which the Atlantic and the lakes *can* be united by sloop navigation. This peculiar situation, with its other advantages, renders this state highly interesting to the politician, the man of business or enterprize, the emigrant, and the traveller. With the latter especially, the ready and safe conveyance up the Hudson and to Lower Canada, and the good roads and accommodations westward, will be additional inducements to visit a country of this description, which moreover furnishes Mineral Waters more efficacious and valuable than the best medicinal springs of Europe, and which (besides many intermediate, sublime, natural views and objects) contains on its western confines the greatest natural curiosity in the world—a country interspersed (exclusive of the great waters before named) with more than *fifteen lakes*, from ten to forty miles in length, and numerous smaller ones, exhibiting as great an extent, variety, and beauty of inland water-scenery as all the other states together.

" Should this Manual, therefore, have any tendency to render the present circumstances, prospects, and advantages of such a country more generally known; its civil divisions and topography more easily understood; or the local situation of its numerous villages and settlements more readily to be ascertained; or should it in any manner prove useful or convenient in offices and counting-rooms—at houses of public entertainment and resort—on the route of the traveller —or in the closet of the citizen and student—it will afford no inconsiderable degree of satisfaction to

" THE PROPRIETOR."

MEDICAL AND PHILOSOPHICAL INTELLIGENCE.

DOMESTIC.

Botanical Intelligence.

Extract of a letter from Henry Muhlenberg, D. D. &c. dated

" LANCASTER, 25th Sept. 1811.

" BY a late letter from Professor Olof Swartz, at Stock-
" holm, I learn that the late excellent PRESIDENT
" DE SCHREBER is no more. In him, we have lost one of
" our principal botanists. Wildenow is still indefatigable
" in publishing his Species. He was all last winter at Pa-
" ris comparing the different *herbaria;* and we may ex-
" pect his *supplementa* to his Species, and his *Systema Vege-*
" *tabile* in a short time."

The New-York Hospital enriched by a most valuable Botanical Library.

THE New-York Hospital now contains a better collection of botanical books, than any institution of which we have recollection among us. It is both select and extensive. It embraces the best systematic works, illustrative of the science, and an assemblage of the most choice local publications; such as the Floras of North America, Russia, Denmark, England, &c. The splendid books of Catesby, Thornton, Curtis, and Miller, are parts of this purchase. In short, the books now added to the former valuable library of the Hospital, are those which heretofore belonged to the late proprietor of Elgin Garden, and were lately purchased of him by the governors of that corporation, for the purpose of facilitating the acquirement of liberal and useful knowledge. And thus, by this noble act, provision is made for communicating instruction in this important branch of science, to distant posterity.

Use of the Comb and Gills of Cocks.

Extract of a letter from Dr. Mitchill to Dr. Rush, dated

" NEW-YORK, July 28, 1811.

" THE male birds of the pheasant-family, are found to be capable of stronger exertion, and for a longer continuance, than the females. And the females are thought to bear exercise better, *cæteris paribus*, than most other birds of their sex.

" The crest and wattles of the cocks are conceived to be the reservoirs or retreating places of the blood, during their battles. It withdraws from the lungs, brain, and organs of sense, on such occasions, to these vascular appendages. By their swelling and redness, they evidently become excited and distended. Mr. Paudenx, who was lately with us, on his way to Caraccas, told me that he had made experiments on male-pheasants (barn-door cocks) when exercised by fighting, *with* the comb and gills, and *without* them. And he constantly found, they were more short-winded, and quickly fatigued, after these organs had been cut off, than before. Amputation of them always lessened the bird's ability. Hence the difference between the cock and hen, in this species can be judged of; as well as that between this female and other female fowls. The same comparison exists between the turkey-cock, and other creatures of the feathered race.

" This view of the economy of the *Phasianus* and *Meleagris* families, gives great support to the opinion entertained by my distinguished countryman, of the spleen, thyroid and thymus glands acting as *waste-gates* for the torrents of blood excited into action by excessive contractions of the vessels in the human constitution. (See Med. Repos. vol. 10. p. 100-102, and ibid. vol. 14, p. 83-84.)

" The analogy was so strong and close that I could not forbear to communicate it, and with it an assurance of the fidelity with which I remain your friend and admirer,

" SAM. L. MITCHILL."

A description of a great Tortoise, or TESTUDO CORIACEA, *taken in the Atlantic Ocean, near New-York, in the autumn of* 1811: *In a letter to John Le Conte, Esq.*

ON the 28th day of September, this year, a very large and uncommon Tortoise was taken at sea, a few miles from Sandy-Hook, and brought into New-York by the pilots. The dimensions of the animal were as follows:

	feet	*inch.*
Length, from the extremity of the beak to the tip of the tail,	7	6
Length of the buckler, from front to rear,	5	8
Circumference of the body, at the girth, just behind the fore-fins, including the principal sinuosities,	13	2
Circuit of the neck,	3	2
Magnitude of the fore-fin above the joint,	3	9
The same at the joint,	2	8
Length of the fore-fin,	3	9½
Distance from the buckler to the extremity of the beak,	1	7½
Space between the extremities of the two fore-fins, measured over the back,	8	5
Breadth of the buckler, over the back,	3	10½
Length of the hinder-fin,	2	1
Circuit of the same,	2	4½
Distance between the extremities of the two hinder-fins,	5	5
Length of the tail,	1	0
Middle circuit of the tail,	1	5
Projection of the tail beyond the buckler,	0	4½
Distance diametrically, across the mouth, from corner to corner,	0	10
Distance between the upper and lower extremities of the beak, when the mouth was wide open,	0	5½
Circumference of the eye-ball, after removal from the natural place,	0	9½

This creature, though well known to navigators and naturalists, is rare in the latitude and on the coast of New-York. It is characterized by Linnæus under the name of *Testudo Coriacea.* It is not recollected that any individual of this species was ever seen as far to the northward as 40° 40′, along the Atlantic coast of North America, before.

Its weight, after loss of blood, and death from a wound it received by a harpoon by the captors, was 798 pounds. While in full health, it might, perhaps, have weighed 20 or 30 pounds more.

Mr. Catesby, who mentions and figures the *Green*, *Hawkbill* and *Loggerhead* tortoises, takes no notice of this species; unless, indeed, it be his *Trunk* tortoise; which his imperfect description, and want of a drawing, allow us no means of discovering. Authors have not given so accurate and circumstantial a description of this tortoise as it deserves. When its form and peculiarities shall be considered by the learned, some of the existing doubts will probably disappear. We hope at some future day to present a correct drawing, with a view of amending the representations made by the Count La Cepede in his *History of oviparous quadrupeds*, and by Sir Thomas Pennant, in his *British Zoology*; both of which are very defective, and appear as if they had been drawn from dried preparations.

The buckler was strongly marked longitudinally with ridges; these were *five* in number. The most prominent was along the spine of the back. Four other ridges reached lengthwise, at about equal distances apart, two on each side of the middle or dorsal ridge. The whole somewhat resembled a clinker-built boat, turned upside down. If the portions of the buckler's circumference next to the flanks and belly, are counted, one on each side, *seven* ridges may be reckoned.

That on the middle of the back is roughened by thirty-one blunt elevations, which may be termed spinal processes. The respective two ridges, one on each side, next to the dorsal ridge, were distinguished, each by twenty-two processes. The respective two ridges next to the flank circumferential portions, had each of them nineteen processes. The circumferential portions forming the flank or abdominal ridges, and constituting the portion of buckler on the lower margin, between the anterior and posterior extremity, contained each twenty-seven processes. The two hindermost of these processes formed knobs, one at each extremity of the projecting buckler, over the tail.

There were no fingers or claws on any of the fins. The foremost were very entire and undivided. The hindermost appeared to have a sort of imperfect division into two lobes.

The whole of the buckler was covered by a black and shining skin. This could be easily made to wrinkle under the finger. Its glossy hue, and its readiness to peel, evinced a similarity to the surface of a porpoise or whale. It bore the resemblance of leather, neatly curried in grain, or rather of morocco leather, well varnished and rubbed.

The lower compartments of the buckler, and the upper surfaces of the fins were delicately interspersed with white, and the black ground so variegated very much resembled Kilkenny marble, of a high polish.

The sides of the belly below the buckler, and the under-surfaces of the fins, were of a white ground, and so checkered with black, as to form a kind of calico, in which there was a great proportion of black. The belly itself was mottled with the two colours, and of these the white was the most predominant and conspicuous.

The shape of the hinder-fins, and the narrowness and elongation of the contiguous parts bore such a similitude to the posterior extremities of seals, that this species of tortoise may seem to form the nearest approach of the family of Testudo to that of the Phoca or Seal.

There were no teeth. The jaws had the common bony margin without lips. There was no organ that could properly be called a tongue; and the orifice of the glottis was within the mouth. Hence the mouth was unusually capacious. Its internal surface, as well as the cheeks, throat and gullet, were, throughout their whole extent, beset with very numerous conical excrescences, of a consistence between flesh and cartilage. They were inclined inwards. They directly favoured the reception of food, and opposed its return. The largest of these denticular bodies was about an inch long; yet though they were all cuspidated, there were none whose points were hard enough to puncture or scratch.

The following account of the dissection of this animal is furnished by Dr. Cock, Professor of Anatomy in the Medical Institution, in a letter to Dr. Mitchill.

DEAR SIR,

BY the politeness of Mr. Scudder I was favoured with an opportunity of dissecting the *Testudo Coriacea*, but from the

hurry of the moment, I could not enter into any minute examination of its parts generally. Should the following remarks, however, be considered in any degree illustrative of the zoological character of an animal which has excited such general interest, it will afford me pleasure to reflect that I have furnished something towards a correct account of it.

The most questionable point relative to the structure of this animal, was the order of its circulation. The Turtle, by Cuvier, is placed among *amphibia*, having three cavities belonging to the heart, viz. two auricles and one ventricle. He has not, however, given a particular account of its structure; but the following sketch from the Edinburgh Encyclopedia, by Brewster, under the article Comparative Anatomy, will shew that the structure which I here found, corresponds in some degree to what has before been observed.

"The turtle and the crocodile," agreeable to this description "have a double heart composed of two auricles and two ventricles, of which the former are divided by a complete partition; but the latter communicate by an opening furnished by a muscular valve that allows a passage from the systemic into the pulmonic ventricle, but prevents its return. The large arterial trunks all arise from the pulmonic ventricle, we say all, because the aorta is composed of three trunks."

In the dissection which I made, the auricles were distinct from one another; the openings between them and the ventricles had each a strong muscular valve, sufficient effectually to prevent the regurgitation of the blood. There was nothing remarkable in the structure of the auricles.

The ventricle, by means of its partial division, had a smaller cavity upon the side opposite to that from which the arteries arose. The pulmonic cavity extended quite down to the apex of the heart, and to all appearance possessed a greater capacity than the other, and was adapted to receive and circulate the whole mass of blood. The vessels arose from it by two distinct beginnings, the pulmonary artery and aorta, the latter soon dividing into three large branches.

The partial muscular septum, which would appear to be the principal distinction, is so placed as to operate in some degree as a valve, suffering the blood to pass readily from the systemic to the pulmonic side; but having somewhat of a curved direction towards that cavity, would prevent its return. From the very limited extent, however, of this projection, it seemed a mere feint towards a double ventricle.

The apex of the heart was strongly attached to the pericardium, but in other parts it had a free and easy motion within it. The same appearance was discoverable in the attachment of the heart of a small turtle which I afterwards examined; but the interior of the ventricle had nothing resembling a partial division.

The lungs of this animal had a fleshy structure, possessing a great degree of density. The cells were very capacious. The trachea was divided by a septum for three or four inches before it separated into the two great bronchial tubes.

The other parts presented no great singularity. The kidneys were very large and granulated in their appearance, but were removed before any minute examination had been made.

The Cephalus, or Head-fish, inhabits the waters of New-York.—From the same to the same.

THE sun-fish of the ocean is now proved to be an inhabitant of our waters, and entitled to be placed in the catalogue of North American fishes. The large one caught by the crew of the frigate President, on her late cruise, and presented by Commodore Rodgers a few days ago, to Dr. Mitchill, was discovered within Sandy Hook. By this latter gentleman it has been given to the proprietor of the museum. This creature weighed upwards of 200 lbs. It is perhaps one of the most odd-shaped, clumsy and peculiar of the animal race; having the appearance of an enormous head, without a proper body or tail, and being one of the most striking instances of the sports of nature. The distinguished English naturalist SHAW, in his *General Zoology*, has properly made a new genus of these mis-created fishes, under the title of *Cephalus*. It comprehends some of the *Diodons* and some of the *Tetrodons*, of former writers. This species is denominated *Brevis*. The individual under consideration is therefore the *Cephalus Brevis*, short head-fish, or short sun-fish.

	feet	*inch.*
The length of this animal, from the nose to the extremity of the tail, was	3	11
The breadth from back to belly,	2	0
Distance from the point of the dorsal to the tip of the anal fin,	5	1

Mortification, ending in the conversion of the parts into a substance resembling mummy.

JOHN PETERSON, aged about 26, and a native of southern Guinea, has lived about 14 years in New-York. He had left Africa when a boy, and was carried to Port-au-Prince.

On a cold night in February, 1811, he had been walking abroad, and his feet had become very cold. Being a barber by trade, he found that the fire which he had left in his shop was extinct. He concluded not to kindle any more in the stove, but to go to bed: the shop was also the bed room, and was very open and chilly.

He covered himself under blankets and went to sleep. On waking he discovered his feet to be stiff and painful. He attempted to rub them but could not succeed in making them warm. This inability was so great that he could not walk, but he hobbled in the morning to the stove, and applied his feet to the fire. The pain excited by the warmth was very great. After which they began to swell; and for three days nothing was done. Then he was carried to the house of a woman who put his feet into a bath of ashes and warm water, and then applied to them turnip poultices. In three or four days gangrenous blisters began to appear, and the skin to peel off.

A discharge for about a fortnight took place, when at length all sensation was abolished. A separation of the mortified parts from the living took place in both ancles, and healthy granulations appeared above.

On the third day of April he was brought to the New-York hospital.

The peculiarity in this case was a conversion of both the feet into dried masses resembling mummies or smoked venison. The soft parts did not run into putrefactive dissolution in the common way, but became hard and shrivelled. The skin, muscles, tendons, ligaments, vessels, and bones appeared to have lost their juices, as if they had been exsiccated in the rays of the sun, or in a smoke-house. And instead of flesh dissolving and dropping to pieces by corruption, there was a spontaneous consolidation into a hard and somewhat leathery or horny consistence. The discharge of ichorous fluids and of fetid exhalations happened

merely from the places where the separation had taken place between the living and the dead parts.

I know not how it has happened that this man's feet are exceptions to the general law governing the septic decay of organized substances. Considering the occurrence to be rather uncommon, it is recorded for more general information; hoping it may shed light upon the curious process of animal preservation and dissolution.

Both legs were amputated, and the man has recovered.

Gold employed to cure Syphilis and other diseases of the Lymphatic System.

BY a rapid glance of J. A. CHRESTIEN's publication entitled *De la Methode Iatraleptique*, &c. printed at Paris during 1811, in 464 pages 8vo. we learn that the author proposes a *new remedy for the treatment of venereal and lymphatic disorders.* This medicine is a preparation of gold. Many cases are related of chancres, warts, secondary ulcers, sore throats and the other forms of inveterate lues cured by its internal administration in small doses, without any local applications, or topical dressings. Though this may appear strange, we shall, nevertheless, give a brief sketch of the the great things which he says he has done.

Dr. C. began his experiments by preparing an amalgam of gold with quicksilver. Having made a complete incorporation of these two metals, he evaporated the mercury by means of a lens, which left the gold behind in the form of a fine and subtile powder. This he administered to poxed patients, and was surprised at the salutary effects it wrought.

On other occasions he volatilized the mercury by common fire, and not by the solar rays.

He sometimes also subjected his amalgam to the action of the nitric acid; and with the metal so comminuted and divided, he had the same success in practice.

Apprehending, nevertheless, that some portion of the mercury might adhere to the gold, and that to such quantity of mercury, however small, might be ascribed the cures, he determined to prepare an oxyd of gold, to be precipitated by

potash from a solution in aqua regia. This produced also the like desirable effect.

He then prepared his golden oxyd by precipitating the metal by ammonia from its solution in nitro-muriatic acid. But on the operation of this he has not collected, as yet, a sufficient number of facts.

The precipitate of gold obtained by means of tin was next employed. This he persuaded himself, had more activity than the oxyd procured through the medium of potash. To this *purple powder of Cassius* he ascribes extraordinary powers as a medicine. And why indeed, should not gold have medical and even anti-syphilitic effects, as well as quicksilver?

The precipitate procured from the nitro-muriatic acid, by evaporation to dryness, could not be employed with safety, because it was deliquescent and extremely caustic. "Supposing then, that a muriate with two bases would present fewer inconveniences, he combined that of soda with "the solution of gold, and obtained thereby, the product "he wished for."

This he found preferable to any of the other preparations, and possessed of infinitely more energy. It is therefore more sparingly administered.

The dose of the divided or comminuted gold, was a quantity not exceeding three grains per day. But the muriate must be managed with much greater caution, and not be exhibited at the commencement to a greater amount than 1-15th of a grain. Although this possessed less causticity than that which had been prepared without the addition of sea-salt, it was still too caustic to be employed alone. For it left a bad impression on the tongue, and would have corroded it, to the injury of the part, without any benefit to the system at large. To prevent this difficulty, he after many trials, found it could be best administered in a mixture of *starch*, *charcoal* and *painters' lac*, (de laque des peintres) although the latter of these combines with a portion of the *muriatic acid*, of which he adds *one grain* to two grains of these substances reduced to a very fine powder.

The author declares that he has for a long time employed all these preparations, without giving his patient any other medicine whatsoever, that he might have indisputable evidence of their efficacy; and having become perfectly satisfied, he has now no apprehension of using with them auxili-

ary means; though in venereal cases, these are seldom necessary. So far from requiring collateral remedies to help them, he finds it necessary to calm and moderate the action of his muriate of gold, especially when prescribed for lues in irritable habits. This is accomplished by causing them to drink freely of whey.

He declares that the amalgam, the several oxyds, and the muriate of gold, all possess indisputable anti-venereal properties. But in the inflammatory stages of fresh poxes, the muriate is sometimes too stimulant. Then the oxyd deserves the preference. In such cases, and in some others they may be combined, with advantage, as for instance mixing $\frac{1}{2}$ a grain of oxyd with 1-15th of a grain of the muriate, and increasing the doses gradually. He has many times begun by 1-12th of a grain of the muriate united to the before mentioned quantity of the oxyd, without exciting any irritation.

To prepare the oxyd by means of tin, this metal is added either filed or dissolved, to equal parts of gold dissolved in nitro-muriatic acid; but the precipitate by the tin in substance is the most complete. In the same proportions he mixes the muriate of gold with the muriate of soda. It is a matter of indifference whether the latter be employed in solution or in substance.

When muriate of gold is prepared by the mixture of two solutions, it possesses an inferior degree of activity, as he has proved by many trials.

He assures his readers that if his method shall be found as successful in the hands of other physicians as it has been in his own, that it will supersede, in a great measure, all other modes of practice. For he avers its effects to be so certain that he regards it in lues and all other syphilitic ailments as much a specific as mercury. He even thinks it superior, if administered by the gums, after the method recommended by Mr. Clare.

Neither season, temperament, nor complication, forbid the administration of this remedy. There are few cases which last longer than two months, unless where the disease is inveterate, accompanied with violent symptoms, or of a very complicated nature. He thinks the mercurial treatment, especially by frictions, would be much more tedious. This new remedy requires nothing more than temperance, during its exhibition. In other respects the patient may

follow his ordinary business, or even pursue a journey, with chancres and buboes upon him; and if he persists in the use of the medicine, instead of being worse he will return cured of them. It is rare that he has recourse to any topical application. In general, sores cicatrize, under the common rules of cleanliness; but he cautions those who employ the muriate or oxyd, that they will create an indelible stain on their linen, if they wipe their fingers on it before they shall have washed them. Sometimes, however, caustics and detergents are applied to foul ulcers.

While he prepared his medicine in small quantities, Dr. C. filed *French louis d'ors* to a form fit for dissolution. After facts had satisfied him of the efficacy of his method, he bought gold which he knew to contain the smallest proportion of alloy. And he observes that the metals allied with the gold, are divided like it, by the action of the mercury, and that they remain mingled in their respective proportions in the pulverulent or comminuted gold.

This writer also employs the different preparations of his golden remedy in various diseases of the lymphatics which are not venereal, such as tumours of the cervical glands, gleets, scirrhous womb, and some other disorders. In scirrhus of the uterus, he relies much upon its efficacy.

Thus much may suffice to make our readers acquainted with this piece of practice. We may mention for their information that *Lecocq* prescribed gold in combination with mercury towards the close of the 16th century. *Eschenreiter*, at the end of the 17th, and *Bassine* at the commencement of the 18th had done the like. During the 17th, *Campi*, *Loss* and *Rebentrost* had recommended gold, as a remedy for pox, in the form of an impalpable powder. About the same period *Ucai* mingled it with cathartics and mercury; and *Poterius* with mercury and antimony. *Lavigne* made his panacea of one part of gold, one part of silver, and two parts of mercury; and HOFFMAN, in the commencement of the 18th century, commended it in the warmest terms. *Weisbach* too praised his saffron of gold; and Lecocq, Hoffman and Van den-Velde have administered gold with their mercury for the purpose of preventing salivation.

To this epitome we subjoin the opinion of Felix Pascalis, M. D. on the work, in a letter dated 28th Oct. 1811.

DEAR SIR,

I have read with much attention the work of Dr. J. A. Chrestien, on his new remedy for syphilis and other diseases. Agreeably to your wishes I now offer my candid opinion and remarks upon it.

Dr. C. has certainly put beyond doubt the efficacy of his various gold preparations in syphilis; and one half of his facts and results would certainly be sufficient to proclaim his complete success; but in other diseases, his facts do not appear to me equally authoritative, because his treatment is in general protracted to an uncommon length of time, during which, changes of season and alterations of constitution may eventually take place, and thus much invalidate the agency of the specific. Dr. C. has not been particular enough in describing the diagnosis and pathology of his chronic and lymphatic diseases, and has left great obscurity on the *modus operandi* of all his gold preparations, and their different degrees of pernicious quality; while he mistrusts two of them which have sometimes proved troublesome and dangerous, that is the muriate of gold and the oxyd by tin; but the amalgama and the oxyd by potash are certainly safe enough and perfectly manageable.

The excellence of these preparations above those of mercury for syphilis, is not, in my opinion, well established by Dr. C. although he declares that no season, no temperament, and no complication of disease can create any obstacle to their efficacy. He has contended, indeed, that they were preferable to calomel, when administered according to the method of Mr. Clare. But not to say much respecting the errors of that method, which is universally rejected or neglected, it is fair to observe that frictions of gold preparations in the mouth must offer much more advantage than mercury; inasmuch as to this metal only it belongs to create a particular irritation and inflammation of salivary glands. However, we may now affirm that such affection (sometimes a very terrible one) is not at all necessary to perform a cure; nay, that in its violent degrees, it proportionally divides and diminishes the influence of mercury in the system, and thereby may ultimately defeat the proposed cure; that salivation ought to be carefully avoided, and that it is *almost always* possible so to do, and in many instances very easy.

I must add in favour of our old remedy that there is no

objection or danger arising from season and temperament, but what can be well remedied or avoided. The effects on the system are no doubt pernicious if too great quantity or too long continuance of mercurials is resorted to. For my part I never found the necessity of so doing even in the most violent cases, and I can accomplish a radical cure in half of the time required for the gold preparations.

A more important effect from this remedy claims our attention and concurrence, in cases of diseases of the uterus, of goitre and other lymphatic diseases or obstructions, in which we are really deficient in our practice and materia medica. Dr. Chrestien has indeed performed some extraordinary cures, and I hope that in all similar cases his advice will be attended to, and his experience and remedies with all their auxiliaries, be diligently resorted to. He has exhibited various oxyds of gold with the root of the *Thymelæa Monspeliaca*, called *Garou* by the French. This plant was anciently thought to possess some anti-syphilitic virtue, and I rejoice that recent trials and combinations of it, have rendered it highly useful in scrofula.

Dr. Chrestien has given the world a rare example of philanthropy and disinterestedness, pursuing secretly during many years his laborious experiments and observations, not to secure any private emolument, but to prepare a more valuable present to the afflicted and to our profession. Who would not admire the virtue of the donor, and what physician would not, by a concurring attention and diligence, add, perhaps, more certainty and value to the proposed means of relieving his fellow-creatures?

The other more voluminous work of Dr. Chrestien, the *Iatraleptic Method*, I propose to read and comment upon a little. I suspect it offers many useful and practical views.

Remaining with great esteem,
Dear Sir,
Your most ob't and humble serv't,
FELIX PASCALIS.

The hon. prof. S. L. Mitchill.

Domestic preparation of Isinglass.

THE glutinous substance called Isinglass, Ichthyocalla,

or fish-glue, has been usually imported to us from Europe. It is said to be prepared there from the sounds or air-bladders of the sturgeons which abound in the great rivers of Russia. In the late embarrassment of commerce, the article has become very scarce and dear.

Fortunately, however, a domestic source for the article has been discovered. Mr. Daniel Waldron, of Mount-Pleasant, in the county of Westchester, (N. Y.) has discovered that the *vesicula natatoria* of a fish, frequent on the coast of New-York, and of the United States, affords a true Isinglass, which is capable of being employed as a glue, and for clarifying coffee and other liquors. It has moreover been employed successfully for preparing *blanc-mange*, and found to carry with it into that elegant article of food, no portion whatever of a fishy flavour. The blanc-mange is as delicate, savoury and fine as if it had been prepared from Isinglass of the Don or Wolga.

While these facts are disclosed, so interesting to the useful arts, the name of the fish is withheld, until the discoverer shall have had time to obtain an exclusive privilege by patent.

New Medical Institution in the City of New-York.

THE advantages which have accrued to the Arts and Sciences by a concentration of the talents and exertions of individuals in public Institutions, are universally known. The National Institute of France, and the Royal Institution of London, present models of such establishments, which every enlightened community must feel anxious to imitate. The former, embracing an immense range of learning, has enhanced the solid and lasting glory of the nation; and the latter, though founded originally in voluntary association, is become the most illustrious school of Chemistry, and of all the other branches of physical knowledge, in the world. Animated by the example of these establishments, a number of friends of Learning in this state, have been induced to associate for the purpose of organizing, in the city of New-York, an Institution for promoting instruction and investigation in medical science, and in all the branches of knowledge having an immediate connexion therewith.

The history of learning in every age sufficiently demonstrates, that the advancement of the Arts and Sciences has been promoted more by the zeal and labour of individuals, than by the patronage of monarchs, or the ordinances of legislative authority. The benefits which have resulted to medical science by the unassisted, and almost insulated efforts of individuals, are known to every physician conversant with the history of his profession. In science, however, there is a communion of interests, which, when it combines the genius, efforts and talents of persons embarked in its service, frequently leads to the most brilliant discoveries and improvements.

In arranging the principles by which this Medical Institution shall be governed, reference will be had to those distinguished European institutions which have been named, and their regulations adopted, so far as the actual difference of circumstances will permit. Those who will be actively engaged in the labours of the institution, will, from their standing in society, be influenced by no other motives than such as appertain to the pursuit of science, and the desire of its promotion. The establishment, therefore, will be solely under the direction and superintendence of men who are devoted to the advancement of medical knowledge and education.

Provisional arrangements have been made to organize this Medical Institution. The Professors will constitute the Literary Department. The Curators and Counsellors will form the Civil Department. Besides which there will be a Chancellor, Presiding Members, and a Recorder. There will be also sections for Honorary, Extraordinary and Corresponding Members. The Presidents, Vice Presidents, Secretaries and Treasurers of the respective incorporated Medical Societies of the State, are considered, ex officio, Constituent Members of the Institution; as it is desirable to establish an intimate connexion and correspondence between those Societies and the Medical Institution, especially with respect to all matters relative to its organization, and its proceedings in the business of public instruction.

At present, it is deemed proper to lay before you the requisite information respecting the Literary Department, and the advantages which will be afforded to Students of Medicine, towards facilitating and completing their system of education.

The Literary Department of the Institution will be divided into classes or sections, and each section or class will be under the immediate direction of the Professor or Professors nominated to such class: pursuant to which the following arrangements have been provisionally established, viz.

Institutes of Medicine, Practice of Physic, and Forensic Medicine, by NICHOLAS ROMAYNE, M. D. and JOHN WATTS, M. D.

Materia Medica, and Mineralogy, by ARCHIBALD BRUCE, M. D.

Anatomy, Physiology, and Surgery, by VALENTINE SEAMAN, M. D. and THOMAS COCK, M. D.

Chemistry and Natural Philosophy, by Mr. JOHN GRISCOM.

Midwifery and the Diseases of Women and Children, by ROBERT BAYARD, M. D.

The Governors of the New-York Hospital have uniformly manifested an earnest desire to favour the progress of Clinical Instruction. This is conducted under their immediate superintendence, and by Physicians and Surgeons exclusively appointed by themselves. The present Clinical Lecturers are Dr. MILLER, Dr. HAMERSLEY, and Dr. SEAMAN; the two former on medical, the latter on surgical cases. An arrangement will be made with these gentlemen, for the purpose of securing to the pupils of the Medical Institution all the advantages of attending the medical and surgical practice, and hearing the Clinical Lectures which are to be delivered in that extensive Hospital.

As the principal object of this Institution is to diffuse the advantages of medical instruction throughout the most distant parts of the state, the President of each Incorporated Medical Society, is authorized in future to designate one Student of Medicine, of good moral character, of diligent habits and promising talents, and to recommend him to the Recorder, or to any of the Professors of the Institution; and every Student so recommended, shall be permitted to attend the different classes free of expense. The fees for other Students who may incline to attend all the Classes of the Institution, will be limited to forty dollars; but should any Student be desirous to attend only one class or section in the Institution, the fee will be fifteen dollars.

The Students will constitute a distinct section in the In-

stitution, and will enjoy certain Privileges and Immunities. Such students as shall make the requisite proficiency in their medical studies, will be invested with the usual Academic Honours, under, under the approbation of the institution.

By order of the Institution.

ARCHIBALD BRUCE, M. D. *Recorder.*

New-York, Sept. 24, 1811.

Remarks on the Anti-rabid species of SCUTELLARIA: *communicated by William Baldwin, M. D. of Wilmington, Delaware.*

To the Editors of the New-York Medical Repository.

GENTLEMEN,

IN a late number of the *Medical Repository*† I observe an engraving of a "*Species of Scull-cap, used for curing the bite of mad-dogs, by Jesse Lewis, of Westchester.*" How far this vegetable may be entitled to the character of a "*Specific* preventative of the canine madness," time alone must discover. But from the account which you have published of it, and the *direful* nature of the disease to which it is applied, (a disease that has so generally triumphed over medical skill,) it merits the attention of physicians.

It appears, however, that the gentleman who furnished you with this account of the Scutellaria, has mistaken its scientific character, and attached to it a specific name belonging to a species which has not, that I know of, been found in America. The plant figured in the Repository is certainly not the *Scutellaria Galericulata* of Linnæus, but the *Scutellaria Lateriflora* of that great naturalist. In the former the flowers are exclusively axillary, while in the latter, although they are sometimes found opposite and axilliary, they are uniformly, as far as I have observed, furnished also with *leafy racemes*, and flowers mostly *lateral*, or inclining to one side, which are prominent distinguishing characteristics of this species. The *racemes* are axillary, but the flowers upon these racemes cannot with propriety be

† Hexade III. vol. II. No. 3.

termed *axillary,* as they do not originate from the main trunk or stem, but from the bosom or axil of the small leaves† of the raceme, or flower stem; from which circumstance, I apprehend, the mistake in the botanical character of the plant originated.

It is customary, as might be expected, for those who are not scientifically acquainted with plants to consider each individual as completely detached from every other, having no idea either of their natural or artificial affinity; hence the *Scutellaria Lateriflora* is spoken of by *Bowne* under the head of *Scull-cap* or *Scutellaria,* as a vegetable standing alone; whereas, there are at least near *fifty* species, natives of this country, all of which are furnished with that kind of *helmet-formed calyx,* from whence originated the *generic* name of the Scull-cap or Scutellaria. And it is well known to botanists, that however the different *species* of a *genus* do frequently agree in their properties and qualities, they are likewise often extremely dissimilar, (which, judging from the sensible qualities, is the case with the genus under consideration,) while others that are not thus allied according to botanical arrangement, are nevertheless so by nature, both as it relates to their *properties* and *qualities* and their general aspect or physiognomy.

I do not suppose, however, that any serious evil would have resulted from the above mentioned error, as the plant could not have been well mistaken if compared with the engraving; but in a work of such superior merit as the New-York Medical Repository unquestionably is, and must be, from the universally well known scientific abilities of its Editors, and its extensive circulation among the scientific in Europe as well as in America, you may, perhaps, deem it of some importance to be correct even in the *specific* character of a plant:—If so, you are at liberty to make use of this letter for that purpose, should the observations contained in it correspond with your own opinions, after having examined the plant; if not, you can as readily consign it to oblivion, as I have no object in view but the extension and improvement of medical science and its auxiliary branches.

P. S. The Scutellaria Lateriflora is abundant in our vicinity, and is, probably, the most extensively diffused of any of the species of this great family of plants, except the *Scu-*

† Thefe fmall leaves ought, perhaps, to be called *floral leaves, (not bractes,)* although they are not thus diftinguifhed in the *Species Plantarum.*

tellaria Hyssopifolia L. which is intensely bitter, and deserving, in my opinion, of the attention of physicians.

Late Work by Mr. Burns.

Mr. Ronalds, bookseller in this city, has rendered an important service to the public by giving an American impression of Mr. JOHN BURNS's "*Popular Directions for the treatment of the Diseases of Women and Children.*" The high reputation of Mr. Burns, as well as the intrinsic merits of this little volume, will insure it a wide circulation.

Dr. Bard's Compendium of Midwifery.

Messrs. Collins's have just issued from the press a new edition, with additions and improvements, of Dr. Bard's Compendium of the Theory and Practice of Midwifery.

Abridgment of Bell's Surgery.

Messrs. Collins's have also lately republished the Abridgment of John Bell's Surgery, by Dr. Smith.

FOREIGN.

Action of Poisons.

Some highly interesting experiments on the different modes in which death is produced by certain vegetable poisons, have lately been made, by Mr. B. C. Brodie, F. R. S. and were read before the Royal Society, Feb. 21st, 1811. They were instituted with a view to ascertain in what manner certain substances act on the animal system, so as to occasion death, independently of mechanical injury. The experiments led to the following conclusions—1. Alcohol, the essential oil of almonds, the juice of aconite, the empyreumatic oil of tobacco, and the woorara, act as poisons, by simply destroying the functions of the brain; universal death taking place, because respiration is under the influence of the brain, and ceases when its functions are destroyed.—2. That the infusion of tobacco when injected into the intestine, and the upas antiar when applied to a wound, have the power of rendering the heart insensible to the stimulus of the blood, thus stopping the circulation; in

other words, they occasion syncope.—3. That there is reason to believe that the poisons, which in these experiments were applied internally, produce their effects through the medium of the nerves, without being absorbed in the circulation.—4. That the woorara, if applied to a wound, produces its effects on the brain, by entering the circulation through the divided bloodvessels, and from analogy we may conclude that other poisons, when applied to wounds, operate in a similar manner.—5. That when an animal is apparently dead from the influence of a poison, which acts by simply destroying the functions of the brain, it may, in some instances at least be made to recover, if respiration is artificially produced, and continued for a certain length of time. Mr. Brodie says, from analogy, he might draw some conclusions respecting the mode in which some other vegetable poisons produce their effects on the animal system; but he forbears to enter into any speculative inquiries, as it is his wish to record facts only. [*London Monthly Mag.*]

Heating by Steam.

Mr. R. Buchanan, of Glasgow, informs Mr. Tilloch, of London, that a place of worship has been for a considerable time heated by steam, on a most simple plan, so as to require little or no attendance, and does not require any water whatever to be added to that first put into the boiler above thrice in a winter. He has seen another mode also, by which a fire of three hours in the morning serves for heating through the rest of the day. This does away the objection to the use of steam as formerly applied for many purposes, such as hot-houses, &c. *Ibid.*

Extraordinary Fœtus.

On the 13th of June, an account was read, at the Royal Society of a fœtus having been taken from the body of a woman, where it had remained 52 years. The narrative was written by Dr. Chester, who examined the body after death. The woman was a native of Gloucester, had been taken in labour as usual, but owing to the unskilfulness of the midwife was not delivered. A surgeon was sent for; but, when he arrived, the action of the uterus had subsided; in a few days the woman got well, and lived to the age of eighty, without having been delivered of the fœtus, when

she died of paralysis. Dr. Chester, having learned the history of the case, opened the body, and found an ossified globe which contained the perfect child, the arms and legs of which were somewhat compressed by this osseous mass, and in some parts absorption had taken place. The fœtus was livid, but not putrid: the bony shell in which it was enveloped was thick and hard. *Ibid.*

Alcohol of Wine.

A paper on the *alcohol* of wine has been read to the Royal Society by Mr. Brande. The object was to refute or confirm the opinion of Fabrioni, that *alcohol* is a product of distillation, and not an essential part of the vegetable liquor. He gave a table of the quantity of *alcohol* contained in various wines and malt liquors; the highest was, that of Marcella wine, which contained 26 per cent. of alcohol; red Champagne, 20; Port, from 20 to 24; Madeira, 19; Claret, 15; Cider and Perry, 12; Ale, 9; Brown Stout, 8; Porter, 6. *Ibid.*

Prizes.

The Royal Medical Society of Edinburgh will give a set of books, or a medal of five guineas value, to the author of the best essay, in answer to the following question.—"Does any decomposition of acids and alkalies take place in their uniting to form neutral salts, according to an opinion advanced by Dr. Davy, in respect to the muriates?" The dissertations are to be written in English, Latin, or French, and to be delivered to the Secretary, on or before the first of December, 1812. *Ibid.*

The Harveian Society of Edinburgh, resuming its accustomed plan of giving a copy of the 4to, edition of Harvey's works published by the College of Physicians of London, for the best dissertation on a subject proposed by the Society, has published the following questions for competition.—For this year, 1811. An Experimental Analysis of Diabetic Urine.—For the year 1812. An Experimental Essay on the best method of preparing a Soporific Medicine from the Lactuca Sativa.—For the year 1813. An Experimental Essay on the Effects of the Succus Spissatus Lactucæ Sativæ on the Human Body. *Ibid.*